Fukushima leaks
30 ans d'accidents et de mensonges

Revue de presse (attention : pour usage personnel seulement. Les articles sont sous copyright)

5 novembre 1979 : le réacteur n°2 arrêté en raison d'une panne sur une pompe
17 septembre 1980 : les centrales japonaises emploient des travailleurs sans véritable formation
3 octobre 1985 : incendie sur le réacteur 1
27 août 1986 : arrêt du réacteur n°5 pour une panne de l'alimentation en eau
4 décembre 1986 : arrêt du réacteur 1 en raison d'une panne de l'air conditionné
23 avril 1987 : un tremblement de terre cause l'arrêt de trois réacteurs
22 juin 1987 : l'IAEA alerte sur les risques d'incendie
21 janvier 1988 : incendie dans le circuit d'air conditionné du réacteur 1
16 août 1988 : les mouvements anti-nucléaires japonais alertent sur les risques de vieillissement des réacteurs de Fukushima
12 décembre 1988 : arrêt du réacteur 2 pour une panne d'une soupape de vapeur
2 janvier 1989 : TEPCO ne sait toujours pas pourquoi le tremblement de terre du 22 avril 1987 a arrêté les réacteurs
30 janvier 1989 : certains employés de la centrale présentent des troubles chromosomiques
3 février 1989 : une panne sur un joint aurait pu entraîner une fusion du coeur sur le réacteur n°2
9 février 1989 : des recherches pour comprendre les accidents sur les joints des pompes
28 février 1989 : des débris de métal trouvés dans les réacteurs
20 avril 1989 : TEPCO présente des excuses publiques pour la panne d'une pompe
3 juin 1989 : arrêt d'un réacteur à la suite d'une fuite d'eau
19 juin 1989 : une succession d'accidents dans les centrales japonaises
20 octobre 1989 : les mesures de sécurité dans les centrales japonaises "sont à même de prévenir un accident grave"
26 octobre 1989 : alerte sur le vieillissement des centrales japonaises
30 novembre 1989 : l'AEC déclare que malgré les accidents, le Japon n'abandonnera pas l'énergie nucléaire.
8 janvier 1990 : une accumulation d'accidents en 1989
23 février 1990 : arrêt du réacteur 2 en raison d'une panne sur une pompe
20 mars 1990 : la Haute-Cour de Sendai repousse une demande d'arrêt de la centrale de Fukushima
29 mars 1990 : La Haute-Cour de Sendai déclare que les centrales sont bien conçues et ne peuvent pas causer de catastrophes
14 avril 1990 : les accidents nucléaires font douter les Japonais
28 juin 1990 : manifestation anti-nucléaire lors de l'assemblée annuelle des actionnaires de TEPCO
12 juillet 1990 : le ministère japonais déclare que le réacteur 3 est en état de marche
9 août 1990 : TEPCO attend la remise en marche du réacteur 3 en raison d'une forte demande d'électricité,
6 septembre 1990 : report du redémarrage du réacteur 3
11 octobre 1990 : la NSC approuve le redémarrage du réacteur 3
23 octobre 1990 : "les ingénieurs japonais estiment que leurs centrales sont virtuellement à l'abri des tremblements de terre"
25 octobre 1990 : inquiétudes dans le voisinage pour le rédémarrage du réacteur 3
1 novembre 1990 : l'AEC plaide pour un développement du nucléaire
4 avril 1991 : poursuite judiciaire poru demander l'arrêt du réacteur n°3
23 mai 1991 : 23 accidents déclarés dans les centrales japonaises en 1990

29 octobre 1991 : des blocs de construction française pour la digue de Fukushima
8 juillet 1992 : arrêt du réacteur 1 à la suite d'une hausse de pression
29 septembre 1992 : arrêt d'un réacteur à la suite d'une panne sur une pompe
30 septembre 1992 : arrêt du réacteur 2 à la suite d'une erreur humaine
30 septembre 1992 : plaintes contre TEPCO en raison de mauvaises informations sur les accidents
1 octobre 1992 : le Japon s'interroge sur la sécurité de ses centrales nucléaires
29 octobre 1992 : deux groupes d'anti-nucléaires déboutés de leurs poursuites judiciaires
31 octobre 1992 : un réacteur arrêté en raison d'une panne sur une pompe
5 novembre 1992 : la Cour suprême décide que les tribunaux ne peuvent pas juger les questions de sécurité nucléaire
10 novembre 1992 : arrêt du réacteur 1à la suite d'une panne sur le moteur d'une valve
7 avril 1993 : TEPCO projette de construire deux nouveaux réacteurs
10 mai 1993 : poursuites judiciaires après la mort d'un travailleur de la centrale
20 juin 1994 : l'ANRE demande une enquête sur l'accident de mai
1 août 1994 : reconnaissance d'irradiation pour deux travailleurs de la centrale
22 août 1994 : TEPCO espère pouvoir construire deux nouveaux réacteurs
14 septembre 1995 : un tremblement de terre accélère la réaction nucléaire sur trois réacteurs
27 novembre 1995 : arrêt du réacteur 6 en raison de pressions anormales
1 mai 1996 : une "pléthore d'accidents" à Fukushima
30 septembre 1996 : construction du réacteur n°8
24 octobre 1996 : TEPCO achète des machines anglaises pour réparer ses enceintes de confinement
27 novembre 1996 : retard dans le redémarrage de réacteurs à la suite de la découverte de fissures
12 décembre 1996 TEPCO demande l'autorisation de construire deux nouveaux réacteurs
20 décembre 1996 : des actionnaires de TEPCO déboutés d'une demande d'arrêt de la centrale
17 janvier 1997 : petit incendie au réacteur n°2
21 janvier 1997 : délai dans le redémarrage d'un réacteur après la découverte de fuites
29 avril 1997 : arrêt du réacteur n°2 à la suite d'une fuite de gaz radioactif
30 avril 1997 : le réacteur n°2 restera arrêté jusqu'à une date non précisée
7 mai 1997 : arrêt du réacteur n°1 en raison d'une baisse du liquide réfrigérant
20 mai 1997 : redémarrage envisagé du réacteur n°2
9 juin 1997 : fuite radioactive sur le réacteur n°1
12 juin 1997 : forte augmentation des accidents dans les centrales japonaises
14 octobre 1997 : fissure découverte sur une canalisation
5 décembre 1997 : arrêt d'un réacteur à la suite d'une panne
20 janvier 1998 : TEPCO envisage de remplacer 144 barres de contrôle en raison de malfaçons
24 janvier 1998 : les résidents vivant autour de la centrale s'inquiètent de l'utilisation du plutonium
30 juillet 1998 : arrêt du réacteur n°6 à la suite d'une fuite de vapeur
18 août 1998 : TEPCO demande aux autorités locales l'autorisation d'utiliser du plutonium (MOX)
26 août 1998 : arrêt du réacteur n°1 à la suite d'une panne
2 novembre 1998 : la préfecture de Fukushima accepte l'usage du MOX
6 décembre 1998 : 75% des résidents de la centrale de Kashiwazaki-Kariwa sont opposés à l'usage du MOX
25 janvier 1999 : incendie sur le réacteur n°1
8 février 1999 : TEPCO déclare que son plus vieux réacteur (28 ans) peut encore fonctionner 32 ans
27 avril 1999 : le Japon envisage de développer son nucléaire civil
28 juin 1999 : des groupes anti-nucléaires demandent au Japon de renoncer au traitement du plutonium

30 juin 1999 : La France va envoyer du MOX au Japon
16 juillet 1999 : deuxième chargement de MOX français pour le Japon
10 septembre 1999 : arrivée attendue du MOX français à Fukushima
28 septembre 1999 : manifestations au Japon contre l'arrivée du MOX français
8 octobre 1999 : fuites radioactives dans un dépôt de déchets de la centrale de Fukushima
1 janvier 2000 : le "bug de l'an 2000" frappe quelques équipements dans les centrales japonaises
10 janvier 2000 : TEPCO repousse ses projets d'utilisation du MOX dans le réacteur n°3
21 juillet 2000 : arrêt d'un réacteur après une fuite consécutive à un tremblement de terre
24 juillet 2000 : fermeture du réacteur n°2 en raison d'une fuite de pétrole dans une turbine
24 juillet 2000 : le gouvernement japonais reconnaît l'inquiétude du public en raison des récents accidents nucléaires
25 juillet 2000 : un troisième réacteur fermé en raison d'une augmentation anormale de l'iode
2 août 2000 : arrêt du réacteur n°6 en raison de la rupture d'une canalisation, abîmée lors du dernier tremblement de terre
30 septembre 2000 : chronologie des principaux accidents nucléaires au Japon
31 octobre 2000 : Fukushima devrait être la première centrale à utiliser du MOX
9 février 2001 : TEPCO persiste à vouloir construire de nouveaux réacteurs
26 février 2001 : le gouverneur de Fukushima refuse d'autoriser l'utilisation de MOX
26 février 2001 : TEPCO annonce un gel de ses constructions de nouveaux réacteurs. Colère des collectivités locales
26 mars 2001 : les anti-nuclaires déboutés de leurs poursuites judiciaires visant à interdire l'usage du MOX
2 avril 2001 TEPCO reporte l'utilisation du MOX dans ses centrales
3 avril 2001 : un maire demande des comptes au gouverneur de Fukushima qui a interdit l'usage du MOX
15 mai 2001 : arrêt planifié du réacteur n°6 après la découverte de fuites radioactives
24 août 2001 : le METI ordonne la vérification de 28 réacteurs
30 août 2001 : installation de quatre barres de liaisons pour réparer une fissure sur le réacteur 3
1 novembre 2001 : arrêt automatique du réacteur n°2 pour des raisons inconnues
17 juin 2002 : la préfecture de Fukishima envisage d'augmenter la taxe nucléaire à 13,5%
21 juin 2002 : le ministre de l'Economie est opposé à l'augmentation de la taxe nucléaire
4 juillet 2002 : accord de l'assemblée préfectorale pour la hausse de la taxe nucléaire
10 août 2002 : inquiétudes sur la résistance des centrales en cas de tremblement de terre
22 août 2002 : fissures découvertes dans certaines canalisations
29 août 2002 : TEPCO a dissimulé plusieurs accidents nucléaires depuis les années 80
30 août 2002 : les falsifications de TEPCO remettent en question la sécurité nucléaire
31 août 2002 : certaines fuites ont été négligées par des employés de TEPCO
2 septembre 2002 : nouvelles révélations sur les falsifications de TEPCO
2 septembre 2002 : arrêt prévu de quatre réacteurs utilisant des pièces endommagées
2 septembre 2002 : les réacteurs suspects continueront à fonctionner
3 septembre 2002 : arrêt du réacteur n°2 en raison d'une fuite radioactive.
4 septembre 2002 : fuite de gaz radioactif : cent fois la dose normale
4 septembre 2002 : TEPCO gèle la construction de quatre nouveaux réacteurs
6 septembre 2002 : TEPCO a camouflé des fissures importantes pendant quatre ans
13 septembre 2002 : TEPCO a falsifié des enregistrements vidéo
16 septembre 2002 : TEPCO a utilisé des pièces non autorisées dans un réacteur
26 septembre 2002 : nombreuses fissures découvertes sur le réacteur n°3
30 septembre 2002 : le gouverneur de Fukushima retire son accord pour l'utilisation de plutonium
4 octobre 2002 : de nouvelles fissures découvertes sur le réacteur n°2
11 octobre 2002 : un cinquième réacteur va être arrêté pour rechercher d'éventuelles fissures
14 octobre 2002 : découverte de nouvelles fuites sur le réacteur n°4
25 octobre 2002 : arrêt d'un réacteur sur ordre des autorités

25 octobre 2002 : de nouvelles falsifications découvertes à Fukushima
1 novembre 2002 : TEPCO retarde la construction de nouveaux réacteurs
11 novembre 2002 : la préfecture de Fukushima retarde l'application de l'augmentation de sa taxe nucléaire
19 novembre 2002 : les Japonais doutent de leur industrie nucléaire
11 décembre 2002 : publication du rapport sur les falsifications de TEPCO
26 décembre 2002 : le gouvernement accepte l'augmentation de la taxe nucléaire dans la préféceture du Fukushima
15 janvier 2003 : la préfecture de Fukushima ne sait pas si TEPCO va relancer ses réacteurs
16 janvier 2003 : de nouvelles fissures découvertes sur deux réacteurs
10 février 2003 : TEPCO envisage de redémarrer trois réacteurs fin mars
14 février 2003 : TEPCO envisage d'arrêter tous ses réacteurs en avril pour des vérifications de sécurité
18 février 2003 : TEPCO est incapable de préciser la date de redémarrage de ses réacteurs
24 février 2003 : le gouvernement impose à TEPCO d'améliorer ses procédures de sécurité
6 mars 2003 : craintes de pénurie d'électricité en raison de la fermeture de 17 réacteurs
11 mars 2003 : le gouvernement autorise, sous conditions, le rédémarrage des réacteurs
12 mars 2003 : TEPCO publie son plan de remise en état de ses réacteurs
14 avril 2003 : l'arrêt de tous les réacteurs de TEPCO fait craindre des coupures d'électricité
29 mai 2003 : TEPCO attend l'autorisation de redémarrer son réacteur n°6
16 juin 2003 : découverte d'une pièce manquante sur le réacteur n°3
10 juillet 2003 : le gouverneur de Fukushima autorise le redémarrage du réacteur n°6
18 août 2003 : redémarrage du réacteur n°3
25 septembre 2003 : un travailleur de la centrale exposé à des radiations
26 septembre 2003 : inquiétudes sur la résistance des centrales nucléaires après un important tremblement de terre
18 novembre 2003 : l'IEA recommande au Japon de restaurer la confiance du public dans l'industrie nucléaire
27 janvier 2004 : fuite d'eau sur le réacteur n°6
4 mars 2004 : la méfiance du public retarde le redémarrage des centrales nucléaires
17 mars 2004 : redémarrage du réacteur n°4
3 juin 2004 : le centre de stockage de déchets radioactifs reprend ses activités
29 juin 2004 : TEPCO va redémarrer trois de ses réacteurs et souhaite y utiliser du plutonium
5 août 2004 : arrêt du réacteur n°3 en raison de "problèmes techniques"
6 août 2004 : redémarrage du réacteur n°2
9 août 2004 : arrêt du réacteur n°2 à la suite d'une fuite d'eau
17 août 2004 : explosion sur une conduite de vapeur
26 août 2004 : redémarrage du réacteur n°2
27 septembre 2004 : les centrales japonaises devront fermer en 2016 si elles ne peuvent pas recycler leurs déchets
29 septembre 2004 : arrêt du réacteur n°2 pour "problèmes techniques"
6 octobre 2004 : érosion anormale des conduites d'eau sur le réacteur n°1
7 octobre 2004 : le gouvernement assure que l'érosion des conduites d'eau ne pose pas de problèmes
14 octobre 2004 : arrêt du réacteur n°2 à la suite d'une panne sur une pompe
18 octobre 2004 : report du redémarrage du réacteur n°4 en raison d'un problème sur le circuit de refroidissement
20 octobre 2004 : redémarrage du réacteur n°5
20 octobre 2004 : redémarrage du réacteur n°4 après réparations
28 octobre 2004 : arrêt du réacteur n°4 en raison de la panne d'une valve
29 octobre 2004 : redémarrage du réacteur n°2
2 novembre 2004 : redémarrage du réacteur n°4

4 novembre 2004 : redémarrage du réacteur n°6
30 novembre 2004 : enquête du gouvernement de Fukushima sur le réacteur n°1
8 décembre 2004 : arrêt du réacteur n°2 en raison d'une fuite d'eau radioactive
17 décembre 2004 : arrêt du réacteur n°6 en raison d'une fuite d'eau
17 décembre 2004 : TEPCO va arrêter tous ses réacteurs pour chercher l'origine d'une fuite d'eau radioactive
7 janvier 2005 : arrêt de tous les réacteurs en raison d'une fuite d'eau radioactive
9 février 2005 : redémarrage des six réacteurs
14 février 2005 : le réacteur n°3 ne redémarrera qu'en mars
22 février 2005 : redémarrage du réacteur n°2
17 mars 2005 : le réacteur n°3 ne peut être redémarré en raison d'une panne sur une pompe
18 mars 2005 : arrêt du réacteur N°3 en raison d'une panne sur une pompe à eau
21 avril 2005 : redémarrage du réacteur n°1
26 mai 2005 : arrêt du réacteur n°1 en raison d'un "problème technique"
3 juin 2005 : redémarrage du réacteur n°1
11 août 2005 : arrêt du réacteur n°1 à la suite d'une fuite radioactive
17 août 2005 : un tremblement de terre occasionne une fuite d'eau radioactive
22 août 2005 : arrêt du réacteur n°5 à la suite d'un problème sur le circuit de refroidissement
16 septembre 2005 : arrêt du réacteur n°1 pour réparer une pompe
10 octobre 2005 : arrêt du réacteur n°2 en raison d'une panne sur une pompe
12 décembre 2005 : arrêt du réacteur n°4 en raison d'une fuite d'eau
21 décembre 2005 : réduction de l'activité du réacteur n°2 à la suite de "problèmes techniques"
19 janvier 2006 : découverte de fissures sur les barres de contrôle du réacteur n°6
6 février 2006 : Toshiba a falsifié les données d'un compteur du réacteur n°6
20 février 2006 : arrêt du réacteur n°3 en raison d'une fuite sur une pompe
17 mars 2006 : arrêt du réacteur n°4 en raison d'une panne sur une pompe
28 avril 2006 : les procédures de sécurité en cas de tremblement de terre doivent être améliorées
15 mai 2006 : arrêt du réacteur n°4 en raison d'une fuite d'huile
18 mai 2006 : des informations confidentielles sur la sécurité de la centrale ont été diffusées par erreur sur Internet
22 mai 2006 : fuite radioactive sur le réacteur n°4
23 mai 2006 : arrêt d'un réacteur à la suite d'une fuite de vapeur radioactive
30 mai 2006 : arrêt du réacteur n°6 en raison d'une fuite de vapeur radioactive
12 juin 2006 : arrêt du réacteur n°3 pour réparation
22 juin 2006 : arrêt du réacteur n°1 en raison d'une fuite de vapeur radioactive
24 juillet 2006 : fuite d'eau radioactive sur le réacteur n°1
1 août 2006 : l'entreprise qui a construit la centrale n°2 poursuivie pour corruption
11 août 2006 : fuite de vapeur radioactive
29 septembre 2006 : arrêt du réacteur n°4 pour réparations
6 novembre 2006 : arrêt du réacteur n°5 à la suite d'une panne
5 décembre 2006 : TEPCO découvre de nouvelles falsifications de données dans les rapports de ses centrales
17 janvier 2007 : arrêt du réacteur n°2 en raison de "problèmes"
1 février 2007 : nouvelles révélations sur les falsifications de données
18 février 2007 : arrêt du réacteur n°4 en raison d'une radioactivité excessive
1 mars 2007 : découverte de nouvelles falsification dans les centrales de TEPCO
1 mars 2007 : la découverte des falsifications de TEPCO ne devraient pas gêner le fonctionnement de ses centrales
12 mars 2007 : TEPCO a dissimulé un arrêt d'urgence d'un de ses réacteurs en 1998
20 mars 2007 : TEPCO a dissimulé que des barres de contrôle sont tombées des réacteurs en 1993 et 2000
22 mars 2007 : les compagnies qui gèrent les centrales nucléaires ne communiquent pas entre

elles
22 mars 2007 : TEPCO a dissimulé des accidents critiques en 1978 et 1999
5 avril 2007 : les entreprises qui gèrent le nucléaire japonais ont commis plus de 10 000 infractions
20 avril 2007 : le gouvernement demande des vérifications plus strictes
27 avril 2007 : alerte sur l'air conditionné sur les réacteurs n°2 et 4
14 juin 2007 : arrêt du réacteur n°3 en raison d'une fuite d'eau
16 juillet 2007 : " Les centrales nucléaires japonaises conçues pour résister aux pires séismes"
19 août 2007 : craintes sur la résistance des centrales japonaises en cas de tremblement de terre
21 août 2007 : le gouvernement autorise TEPCO a retarder les vérifications de sécurité sur son réacteur n°3
20 septembre 2007 : fuites radioactives à la suite d'un tremblement de terre de magnitude 6.8
4 octobre 2007 : TEPCO améliore sa communication à la suite du tremblement de terre
12 octobre 2007 : arrêt du réacteur n°2 en raison d'une panne sur l'échangeur
24 mars 2008 : TEPCO demande au gouvernement de prolonger de 10 ans l'exploitation du réacteur n°4, qui fonctionne depuis 29 ans
31 mars 2008 : les centrales nucléaires doit être prêtes à affronter des tremblements de terre plus importants
10 avril 2008 : TEPCO envisage une croissance de 1% annuel jusqu'en 2017. Projet de construction de deux nouveaux réacteurs à Fukushima
25 mai 2008 : un travailleur de la centrale, atteint d'un cancer consécutif à une irradiation, débouté de sa demande d'indemnisation
4 juin 2008 : des mineurs employés pour effectuer des inspections de centrales nucléaires
4 juin 2008 : redémarrage du réacteur n°5, arrêté à la suite de "problèmes techniques"
10 juin 2008 : arrêt du réacteur n°5 en raison d'une panne de turbine
14 juin 2008 : fuite radioactive à la suite d'un tremblement de terre
11 juillet 2008 : ralentissement du réacteur n°5 pour réparation
18 juillet 2008 : le gouvernement autorise TEPCO à repousser les opérations de maintenance sur le réacteur n°3
20 juillet 2008 : une longue liste de procès contre les centrales nucléaires au Japon
6 août 2008 : arrêt du réacteur n°3 pour "réparations"
21 octobre 2008 : des officiels français participent à un exercice d'alerte sur le réacteur n°3
17 février 2009 : création de 7 centres de crise à proximité des centrales nucléaires
24 février 2009 : arrêt du réacteur n°1 à la suite d'un "problème technique"
10 mars 2009 : l'utilisation de plutonium pourrait enfin être d'actualité
6 août 2009 : arrêt du réacteur n°3 à la suite de la découverte d'une "anomalie"
23 novembre 2009 : quel avenir pour le nucléaire au Japon ?
16 février 2010 : la préfecture de Fukushima est disposée à accepter l'utilisation du plutonium
28 février 2010 : les centrales japonaises n'ont pas souffert du tsunami
3 mars 2010 : arrêt du réacteur n°6 en raison d'une canalisation défectueuse
2 juin 2010 : arrêt du réacteur n°1 à la suite d'une panne du circuit de refroidissement
13 juin 2010 : le tremblement de terre n'a pas affecté la centrale
17 juin 2010 : arrêt du réacteur n°2 à la suite d'une "anomalie"
9 août 2010 : introduction d'un recours judiciaire pour interdire l'usage du plutonium
18 août 2010 : le réacteur n°1 doit être arrêté à la suite de la découverte d'une fuite radioactive
23 août 2010 : l'énergie nucléaire est une opportunité pour le Japon
14 septembre 2010 : le réacteur n°3 va être redémarré et utilisera du MOX pour le première fois
16 septembre 2010 : TEPCO souhaite augmenter la part du nucléaire et des énergies renouvelables
18 septembre 2010 : démarrage de l'exploitation du MOX
25 octobre 2010 : Areva estime que l'utilisation de MOX ne présente pas de danger pour les populations

5 novembre 2010 : arrêt d'urgence du réacteur n°5 en raison de "problèmes"
13 décembre 2010 : projets et difficultés de TEPCO
24 décembre 2010 : redémarrage du réacteur n°5, arrêté à la suite d'une panne sur une pompe
12 janvier 2011 : TEPCO décide d'allonger de trois mois le délai entre deux inspections du réacteur n°3, pour produire davantage
7 février 2011 : la NISA autorise TEPCO à utiliser le réacteur n°1 (40 ans) pendant 10 ans de plus
7 mars 2011 : les projets de TEPCO pour augmenter la production nucléaire
9 mars 2011 : à suite du tremblement de terre, TEPCO "confirme" que la centrale de Fukushima n'a pas été endommagée
11 mars 2011 : une "anomalie" signalée sur les réacteurs 1 et 2
11 mars 2011 : l'IAEA déclare que les réacteurs ont été arrêtés en toute sécurité lors du tremblement de terre
11 mars 2011 : état d'urgence déclaré à Fukushima

5 novembre 1979 : le réacteur n°2 arrêté en raison d'une panne sur une pompe

Trouble with pump closes Japanese reactor quickly

Associated Press

The Globe and Mail

TOKYO (AP) - Pump trouble automatically shut down a Japanese nuclear power plant's reactor yesterday, less than 24 hours after a slow leak at another reactor had released 80 tons of coolant water, Government and newspaper reports said.

No threat of outside radioactivity was reported at either plant.

The Japanese Atomic Energy Commission scheduled a meeting today to investigate the water leak in the plant at Takahama, about 300 miles west of Tokyo, to decide whether that reactor can resume operations.

The new problem is at the 784,000-kilowatt reactor of the Tokyo Electric and Power Co.'s plant at **Fukushima**, about 130 miles north of Tokyo.

Officials said the reactor automatically stopped operating after developing trouble in the condenser pump. They said there is no danger of radioactive leakage and that the company is investigating the cause of the trouble.

Officials are taking seriously the water leak at the No. 2 reactor of Kansai Electric and Power Co.'s Takahama power plant because of its size, press reports said.

Company officials were not available for comment during the weekend.

The newspaper Asahi said the Takahama reactor was shut down after warnings sounded in the control room on Saturday that the level of water in the reactor dropped and radioactivity levels inside the core increased sharply.

It said no radioactive material was detected outside the core unit.

The newspaper said 80 tons of the 180 tons of water in the primary cooling system were lost before

officials wearing protective suits could approach and close valves to stop the water outflow. The contaminated water leaked on to the floor of the core unit, it said.

The emergency core cooling system, which pours tons of water into the reactor when core temperatures reach dangerously high levels, was not needed because of the slowness of the leak from a pipe in the primary cooling system, the report added.

The Takahama No. 2 reactor resumed operations last week after a six-month periodic shutdown for inspection. It was scheduled to return to full capacity on Nov. 10.

Japan is second to the United States in the use of nuclear power, with 20 reactors now supplying 10 per cent of the country's electricity needs.

The Takahama reactor was designed by U.S. Westinghouse.

17 septembre 1980 : les centrales japonaises emploient des travailleurs sans véritable formation

'Gypsies' run A-plants in Japan, book claims

Associated Press

The Globe and Mail

P20

TOKYO (AP) - Japan's 11 nuclear power plants are mostly maintained by ill-trained day laborers who violate safety rules and under-report their exposure to radiation, says a Japanese journalist who worked in the plants.

Freelance journalist Kunio Horie also says the utility companies that own the plants ignore or tolerate safety violations and use day laborers to avoid paying benefits or higher wages.

Mr. Horie worked for seven months in three different plants as a manual laborer, one of thousands who drift from plant to plant under subcontracts. He has written a book about his experiences, Nuclear Gypsies.

The title comes from the name given to job-hungry day laborers who work at one plant one day and another the next.

Mr. Horie said in an interview that he and his colleagues at one plant in the state of Fukui were ordered to use a towel to wipe radioactive water off reactor parts.

"It's an anachronism for a supposedly ultra-modern nuclear facility," he said.

In a plant in **Fukushima** state, Mr. Horie wrote, he told one of his colleagues that a monitoring device showed he had higher than allowed radioactive contamination on his boots.

The worker casually suggested Mr. Horie try a different monitoring device, a "generous" one that showed a lower level.

As the second monitor indicated a safe level, the colleague smiled and said, "Now you know better."

Japanese Government statistics show that 34,155 people were subcontracted to nuclear power plants in 1978.

Officials of Tokyo Electric Power Co. and the Ministry of International Trade and Industry said it was uneconomical to hire all full-time employees. ADDED TERMS:Atomic power stations atomic energy

3 octobre 1985 : incendie sur le réacteur 1

REACTOR NOTES PERTAINING TO THE GENERATING TABLE FOR AUGUST --- Lisa Buono

Nucleonics Week

NUC

Pg. 13

Vol.26, No. 40

[...]

Japan: Tokyo Electric Power Co. had two problems, including a fire, at its **Fukushima**-I-1 BWR in August, the Agency of Natural Resources & Energy (ANRE) announced. Following a regular maintenance and refueling shutdown, the plant restarted on Aug. 7 and was test-operated at capacity (460 MW) started Aug. 11. On Aug. 21 at 10:30 a.m., the plant scrammed on a false signal that the main steam valve had closed. A worker, ANRE found, dropped a bag of metal pieces while building a scaffold and it hit piping connected with a steam pressure detector, leading to the incorrect alarm. The BWR restarted Aug. 27 at 7:05 p.m. only to scram at 11:34 p.m., again because of a signal indicating the same valve closed. Before the cause was discovered and while the reactor remained on a standby, a fire broke out in a power room on Aug. 31 at about 6:42 a.m., burning cables. The fire was under control by 8:56 a.m. Located in the turbine house, the room supplies power to start up the plant.

Meanwhile, Japan Atomic Power Co. suspended its Tokai-1 gas-cooled reactor Aug. 9-23. The plant was being test-operated on Aug. 8 when a coolant gas safety valve in one of the four heat exchangers opened. An estimated 1 curie of radioactive gas was released to the atmosphere. (The plant must limit to 16,000 curies its annual gas release.) Operators manually suspended the plant on Aug. 9. Rings, used to stabilize gas-relieving pressure, were replaced in all four heat exchanger valves before restart on Aug. 23.

Five units remained closed throughout August for maintenance and refueling: **Fukushima**-I-4 and I-6, Hamaoka-2, Takahama-1 and Fugen. Mihama-3 was shut down Aug. 24 for maintenance and refueling and three other reactors restarted after planned shutdowns: Genkai-1 on Aug. 8, Ikata-1 on Aug. 19, and Ohi-1 on Aug. 26.

27 août 1986 : arrêt du réacteur n°5 pour une panne de l'alimentation en eau

A malfunction of the water supply system at the Tokyo Elevtric Power Co's power station in Fukushima prefecture caused a shut down of the nuclear reactor.

Textline Multiple Source Collection (1980-1994)

TMSC

Mr Yuichi Komakine, spokesman for the company, said the accident occurred on Monday at the No 5 reactor of a power plant in **Fukushima** prefecture, 114 kilometres north-west of Tokyo.

4 décembre 1986 : arrêt du réacteur 1 en raison d'une panne de l'air conditionné

NOTES PERTAINING TO THE GENERATING TABLE FOR OCTOBER

Nucleonics Week
NUC
Pg. 11
Vol. 27, No. 49

Japan's **Fukushima** I-1, **Fukushima** I-4, Genkai-1, Hamaoka-2, Ikata-1, Kashiwazaki-Kariwa-1, Ohi-1, and Sendai-2 were all down for refueling and maintenance. Tokai-1 was test operated for 113 hours. Takahama-1 and **Fukushima** II-3 resumed operation Oct. 1. **Fukushima** II-1 operation was manually suspended Oct. 14 due to an abnormal noise in a duct that provides cooling air to a duct through which electric current is sent from a generator to a transformer. Blades, installed in the small duct to control the cooling air flow, were found to have knocked into each other. The whole air duct was replaced so that the plant could resume operation Oct. 19.

23 avril 1987 : un tremblement de terre cause l'arrêt de trois réacteurs

Strong 6.5 quake jolts Japan, shuts down nuclear plants

Associated Press

The Orange County Register

A strong earthquake shook northern Japan early today, rocking buildings and triggering automatic shutdowns at three nuclear power plants. But police said there were no reports of casualties or major damage.

The quake registered 6.5 on the Richter scale, indicating a tremor capable of causing widespread damage if centered in a populated area. However, the quake was centered about 25 miles under the sea bed off **Fukushima**.

It was felt in Shirakawa, 125 miles northeast of Tokyo, and the surrounding area at 5:13 a.m., the

Central Meteorological Agency said.

The quake caused three of the five functioning plants of the **Fukushima** Nuclear Power Station to shut down, said Makoto Sugihara, an official of the Energy Agency's nuclear power operation administration office. He said there were no reports of radiation leaks or other trouble.

A sixth plant at the complex is out of service.

Sugihara said today's quake was on the borderline where automatic shutdown is triggered, and three of the plants reacted while two did not.

He said the three plants resumed operations about 10 hours later after experts inspected and confirmed the quake had not caused any problems.

It was the third time a quake shut down nuclear plants. Two plants in **Fukushima** were stopped in July 1983 and one plant in Fukui, southwestern Japan, was shut down in November 1985, Sugihara said.

High-speed trains in northeastern Japan were temporarily halted because of the quake, according to Japan Railways.

The Richter scale measures the magnitude of a quake at its epicenter, based on the ground motion recorded on seismographs. An earthquake of 5 on the Richter scale is considered very strong and one measuring 6 is severe, capable of widespread damage near the epicenter.

Every increase of one digit represents a tenfold increase in magnitude.

22 juin 1987 : l'IAEA alerte sur les risques d'incendie

IAEA SAFETY REPORT EMPHASIZES FIRES, FEEDWATER, AND POWER SUPPLY --- Gamini Seneviratne, Vienna

Inside N.R.C.

NRC

Pg. 8

Vol. 9, No. 13

Fires, loss of electrical power, feedwater systems failures, nuclear power plant aging, and increasing industrial usage of tritium are objects of attention in the IAEA's Nuclear Safety Review for 1986, released at the agency's June Board of Governors meeting.

The review for 1986 is, not surprisingly, dominated by the accident at the Chernobyl plant in the Soviet Union. All other events reported to the agency in the year were comparatively insignificant, but a number of them in three selected categories--fires, loss of electrical power, and incidents affecting the auxiliary feedwater system--are included to illustrate patterns to which plant operators are paying particular attention.

Fires at nuclear plants were highlighted in 1985 and assumed ever greater importance following

Chernobyl, the review says. "The accident sharply underlined the need not only to prevent fires but to be prepared to fight any that may occur under high radiation levels." The IAEA incident reporting system (IRS) data base had four fire-related accidents added to it in 1986. They occurred in a turbine of a Candu reactor at Douglas Point, Canada; at a transformer station in the Finnish national electrical grid; in an electrical cubicle at Japan's **Fukushima** II-1; and in cables in India's Rajasthan-2 reactor building. None led to a radioactive release. The Indian accident, which disabled the unit for nearly seven weeks, illustrates the importance of safety systems to protect a reactor in the event of fire, the review states.

21 janvier 1988 : incendie dans le circuit d'air conditionné du réacteur 1

Briefly

Nucleonics Week

NUC

Pg. 14

Vol. 29, No. 3

JAPAN: Small fire reported at **Fukushima** I-1. A minor fire took place January 14 in the air-conditioning room of the 1,100-MW **Fukushima** I-1 BWR of Tokyo Electric Power Co. (TEPCO), but it was extinguished 46 minutes later, officials reported. No radiation leak was reported, and the fire caused no stoppage of power generation and transmission, they said. The fire started near the filtering unit for the incoming air, officials said, and was put out by plant workers. Fire authorities Friday were investigating the mishap. Neither monetary damage nor time required for repair was known immediately. (usui)

16 août 1988 : les mouvements anti-nucléaires japonais alertent sur les risques de vieillissement des réacteurs de Fukushima

ANTI-NUCLEAR PLANT MOVEMENT FINALLY GAINS GROUND IN JAPAN. BY By Nao Nakanishi

Reuters News

LBA

TOKYO, Aug 16, Reuter - They are the only people to have been bombed by nuclear weapons, but only now has a popular Japanese anti-nuclear power movement begun to gain ground.

The Japanese have, until recently, shown an unreserved acceptance of the idea of nuclear plants as a clean and safe source of power. But some experts say the growing number of nuclear plants are not nearly as safe as the government suggests.

"Chernobyl finally made people understand nuclear power plants can also endanger our life," said Jinzaburo Takagi, who has campaigned against nuclear power for many years.

Radioactive fallout from a fire at the Chernobyl plant in the Soviet Union in April, 1986, spread all over the world, contaminated food in Europe, and turned large parts of the local area into a wasteland.

Two recent bestselling books -- "A Dangerous Story: Chernobyl And The Fate Of Japan" by Takashi Hirose, and Sumiko Kansha's "If It Is Not Too Late" have popularised the issue.

Kansha, a housewife with two children in the southern city of Fukuoka, knew nothing about nuclear power. She said she was shocked into finding out by the Chernobyl disaster.

"The United States and the Soviet Union, both countries with the technology to send people to the moon, had nuclear accidents. How can we be so sure Japan is absolutely safe?" she said in her book.

This year, the national press reported that Michihiko Tanaka, a former designer of nuclear reactors, told an anti-nuclear conference that one reactor vessel he had worked on was repaired by the company Hitachi after flaws were found in the structure.

Tanaka said that when the reactor vessel in **Fukushima**, in the north, began to age it could break suddenly due to metal stress.

[…]

12 décembre 1988 : arrêt du réacteur 2 pour une panne d'une soupape de vapeur

TOKYO ELECTRIC TO SHUT DOWN NUCLEAR REACTOR.

Reuters News

LBA

TOKYO, Dec 12, Reuter - Tokyo Electric Power Co Inc will shut down a reactor at its **Fukushima** No. 2 nuclear power plant in northern Japan from 1500 GMT, Ministry of International Trade and Industry (MITI) officials said.

They said the company will shut down indefinitely the 1.1 million kilowatt reactor to investigate malfunctions in one of the four main steam valves on the pipes which connect the reactor with turbines. Tokyo Electric resumed operating the reactor on Friday after it stopped automatically on December 3.

The plant is the second nuclear plant to shut down in Japan in recent weeks. The 1.17 million kw capacity reactor at the Oi plant operated by Kansai Electric Power Co Ltd in central Japan has been temporarily shut down since October 17.

MITI officials said the investigation will take at least a week. "It is not clear whether this will prompt direct burning of crude oil at Japanese utilities," one said. "They may boost purchases of low sulphur fuel oil if that's economical."

Tokyo Electric is expected to ask other power companies to help cover any shortages caused by the reactor shutdown.

Tokyo Electric started slowing down the operation of the **Fukushima** reactor at 0400 GMT, MITI officials said.

The reactor stopped automatically on December 3 when abnormalities developed in its operation.

Japan has 35 operational nuclear reactors at 15 power plants, a MITI official said.

Nuclear power supplies some 30 pct of Japan's total electricity needs, MITI figures show.

2 janvier 1989 : TEPCO ne sait toujours pas pourquoi le tremblement de terre du 22 avril 1987 a arrêté les réacteurs

TOKYO ELECTRIC POWER CO. (TEPCO) IS STILL TRYING TO DETERMINE --- Danialle Weaver, Washington

Inside N.R.C.

NRC

Pg. 14

Vol. 11, No. 1

TOKYO ELECTRIC POWER CO. (TEPCO) IS STILL TRYING TO DETERMINE the cause of a seismically induced high flux trip experienced in April 1987 at TEPCO's **Fukushima** I site, according to staffers with the Office of **Nuclear** Reactor Regulation (NRR) who recently met with key Japanese utility staffers, government representatives, and nuclear researchers.

During an April 22, 1987 earthquake, which U.S. Geological Survey (USGS) records indicate measured 6.6 on the Richter scale, three of the site's six reactors scrammed. The three units were **Fukushima** I-1, a 460-MW General Electric BWR, and **Fukushima** I-3 and I-5, which are 784-MW Toshiba BWRs. Two other units--**Fukushima** I-4, a 784-MW Hitachi unit, and **Fukushima** I-6, an 1,100-MW GE BWR--did not trip during the earthquake. The remaining unit, **Fukushima** I-2, a 784-MW GE BWR, was down for refueling.

According to TEPCO data, however, none of the reactors scrammed during an April 7, 1987 earthquake, which, a USGS spokeswoman said, measured 6.4 on the Richter scale. The USGS records show that the epicenter of the earlier earthquake was located in the same place as the later one, the spokeswoman said.

According to a November 1988 staff report of the October trip, TEPCO has ruled out core internal effects, such as changes in the distance between fuel assemblies. TEPCO believes that the scrams were caused by some type of rapid electrical noise phenomenon, such as relay chatter or connector

vibration, the memorandum said. However, TEPCO has not been able to determine the exact cause of the scrams and is continuing analytical and experimental reviews. Also, the memo said, high-speed monitoring devices were installed in the **Fukushima** units in order to obtain more detailed plant data in future seismic events.

The Japanese also are known to be interested in the recent earthquake in Soviet Armenia, which USGS said measured 6.9 on the Richter scale. Soviet Prime Minister Nikolai Ryzhkov announced that Armenia-1 and -2, which are two Soviet-design VVER-440 Model V230 PWRs, were undamaged in the earthquake, but that they would be shut down to "meet the wishes of the Armenian public" (Nucleonics Week, 15 Dec. '88, 1).

According to DOE data on the Armenian units, the site is located in one of the highest seismicity regions in the Soviet Union that contain **nuclear** reactors. Prior to a March 4, 1977 earthquake at Vrancea, Romania, which measured 7.2 on the Richter scale, the Soviet Union did not specifically take into account seismic design criteria or site-specific seismicity. Following the Vrancea earthquake, the Soviets discovered that one of the steam generators of the Bulgarian Kozloduy-1 reactor, a VVER-4400 Model V230 located 330 kilometers from the epicenter of the earthquake, had been displaced by nearly five inches. Later-model VVER 440s and VVER-1000s were designed to be "earthquake-proof."

Armenia-1 entered service in 1976, shortly before the Vrancea earthquake. Because of the high seismicity of Armenia, construction on Armenia-2--then under way--was halted while the seismic adequacy of the design was studied. No specific changes were made on Armenia-1, according to DOE. However, steel ties were added to the exterior wall of unit 2's turbine building; the wall between the control and auxiliary equipment building and the turbine building was changed from brick to reinforced concrete, poured in-situ, and steel framing in the reactor bay was increased by 25%.

Other changes included doubling of the reinforcement rods in the reactor building's outer walls; redesign and reinforcement of the foundation slab and the downward-protruding reactor shaft; a compressible soil seam beneath the bottom of the reactor shaft was removed and refilled with concrete; hydraulic shock absorbers were added to protect flexible piping systems. Also, ribs were added to the underside of the foundation slab to increase the strength and stiffness of the foundation slab. The downward-protruding reactor shaft was eliminated in later-model VVERs.

A DOE staffer familiar with the Armenian units and the events surrounding the earthquake said he did not doubt the Soviets when they said both units were undamaged, even though they also announced that the units would be shut down. Because of the way two tectonic plates come together in Armenia, the stresses and loadings produced at the Armenian site were twice as high as those expected in the region--and one to two orders of magnitude higher than the units are designed for, the DOE staffer said. "It was a situation where you have an earthquake with that (higher-than-expected) intensity that far (90 kilometers) away from the quake's epicenter," he said. Although both units should have had no problems withstanding the earthquake, the staffer said, "They've got to be thinking, 'We were wrong once, we could be wrong again.'"

30 janvier 1989 : certains employés de la centrale présentent des troubles chromosomiques

N-PLANT WORKERS SHOW CHROMOSOME DAMAGE. (NUCLEAR **POWER PLANT)**

Japan Economic Newswire

KYODO

890130016

N-PLANT WORKERS SHOW CHROMOSOME DAMAGE+

FUKUSHIMA, JAN. 30 KYODO

MALE WORKERS AT **NUCLEAR** POWER PLANTS HAVE TWICE AS MANY ABNORMAL CHROMOSOMES AS THEIR COUNTERPARTS IN THE GENERAL POPULATION, ACCORDING TO A RECENT SURVEY BY A PREFECTURAL-GOVERNMENT-RUN RESEARCH INSTITUTE.

DURING A FIVE-YEAR PERIOD BEGINNING IN 1984, THE SURVEY ANALYZED 93,505 LYMPH CELL SAMPLES COLLECTED FROM 115 ADULT MALE PLANT WORKERS AT THE TOKYO ELECTRIC POWER CO.'S NO. 1 AND NO. 2 PLANTS IN OKUMA, **FUKUSHIMA** AND FOUND THAT 0.22 PERCENT OF THE CELLS CONTAINED MALFORMED CHROMOSOMES.

THE SURVEY COMPARED THE SAMPLES WITH THOSE TAKEN FROM 170 OTHER MALE WORKERS OF THE SAME AGE GROUP WHO WERE NOT CONNECTED WITH THE PLANTS, AND FOUND THAT ONLY 0.12 PERCENT OF THE LATTER SAMPLES SHOWED CHROMOSOME DEFECTS.

THE AUTHORS OF THE SURVEY SAID THAT THEIR STUDIES DID NOT SHOW THAT THE DEFECTS COULD BE PASSED ON GENETICALLY.

THE RESULTS WERE REPORTED TO THE **FUKUSHIMA** PREFECTURAL GOVERNMENT UPON COMPLETION AT THE END OF LAST YEAR BUT THE PREFECTURAL AUTHORITIES DID NOT RELEASE THE REPORT, SAYING, "THE CONTENTS ARE NOT SUCH AS TO BE VIEWED AS PROBLEMATIC."

3 février 1989 : une panne sur un joint aurait pu entraîner une fusion du coeur sur le réacteur n°2

BROKEN PUMP POSED MELTDOWN RISK IN ATOMIC PLANT. (IN FUKUSHIMA PREFECTURE, JAPAN)

Japan Economic Newswire

KYODO

890203075

BROKEN PUMP POSED POSSIBLE MELTDOWN RISK IN ATOMIC PLANT+

FUKUSHIMA, FEB. 3 KYODO

A CRACKED RING RESULTED IN A COOLING SYSTEM FAILURE AT AN ATOMIC POWER PLANT IN **FUKUSHIMA** PREFECTURE A DAY BEFORE SCHEDULED REPLACEMENT OF THE PART LAST MONTH, PLANT AUTHORITIES SAID FRIDAY.

EXPERTS SAY THE FAILURE COULD HAVE LEAD TO A CORE MELTDOWN IF LEFT UNCHECKED.

A MID-TERM INSPECTION REPORT RELEASED FRIDAY INDICATED THAT FRAGMENTS OF A WATER PUMP CAUSED THE FAILURE AT THE ATOMIC POWER PLANT.

AUTHORITIES AT TOKYO ELECTRIC POWER CO.'S **FUKUSHIMA** NO. 2 NUCLEAR POWER PLANT SHUT THE NO. 3 REACTOR DOWN ON JANUARY 6 AFTER DISCOVERING AN IRREGULARITY IN THE CIRCULATING PUMP.

INSPECTORS FOUND THAT A 100 KILOGRAM RING WELDED TO THE PUMP'S AXLE HAD BECOME DISLODGED, WITH A 22 KILOGRAM SECTION BREAKING OFF AND CRACKING A PIECE FROM THE PROPELLER BELOW. FIVE OF THE EIGHT BOLTS AFFIXING THE AXLE HAD ALSO COME LOOSE.

THE SEARCH FAILED TO TURN UP FOUR OF THE FIVE FASTENING NUTS. A STRAY NUT ENTERING THE FUEL CORE COULD DISTURB THE REACTION PROCESS. OFFICIALS HAVE RECORDED NO ABNORMAL INCREASE IN CORE TEMPERATURE SINCE THE ACCIDENT.

INSPECTORS SUSPECT THE MISSING PIECES ARE LODGED IN THE OPENING OF TURBINE PUMP WHICH RECIRCULATES COOLED WATER TO THE REACTOR.

OSAKA UNIVERSITY LECTURER SANSHIRO KUME SAID THAT PUMP FAILURES IN SUCH PLANTS CAN LEAD TO A MELTDOWN OF THE NUCLEAR CORE SIMILAR TO THAT WHICH OCCURRED AT THE U.S. THREE MILE ISLAND FACILITY IN PENNSYLVANIA IN 1979.

BOILING WATER REACTORS SUCH AS THOSE AT THE **FUKUSHIMA** PLANT USE HEAVY WATER AS A COOLANT TO CONTROL THE PACE OF THE CORE'S ATOMIC REACTION. A FAILURE IN THE CIRCULATION SYSTEM CAN LEAD TO OVERHEATING OF THE REACTOR'S CORE.

TOKYO ELECTRIC SAID IT WILL SHUT DOWN AN ATOMIC REACTOR IN NIIGATA PREFECTURE WHICH USES THE SAME AXLE APPARATUS ON SATURDAY.

CRACKS DISCOVERED IN RINGS ON SIMILAR PUMP SYSTEMS DURING AN INSPECTION OF THE NO. 1 REACTOR IN AUGUST LAST YEAR PROMPTED REPLACEMENT OF THE PART ON OTHER REACTORS OF THE SAME PLANT DURING SCHEDULED INSPECTIONS.

THE PUMP FAILURE AT THE NO. 3 REACTOR OCCURRED A DAY BEFORE THE SCHEDULED INSPECTION FOR THE REACTOR WAS TO START ON JANUARY 7.

9 février 1989 : des recherches pour comprendre les accidents sur les joints des pompes

NRC, JAPANESE LOOKING FOR CAUSE OF FAILED BWR PUMP BEARING RINGS --- Eric Lindeman, Washington

Nucleonics Week

NUC

Pg. 3

Vol. 30, No. 6

NRC is trying to determine whether cracking and failure of recirculation pump in-water bearing rings could be a generic problem for U.S. BWRs after reports of the problem at Tokyo Electric Power Co.'s (TEPCO) **Fukushima** II-1 and -3, both 1,067-MW (net) BWR-5s. The agency plans to meet with officials of General Electric and the BWR Owners Group within two weeks, but "preliminary indications" from U.S. utilities and from the Japanese Ministry of International Trade & Industry (MITI) are that the failed bearing rings "are more of a Japanese problem," said one NRC official.

According to NRC, the problem first occurred at **Fukushima** II-1 in 1984 and was identified again during an annual maintenance outage last year. Then, last month, after shutting down the unit to investigate vibration in the primary loop recirculation pump at **Fukushima** II-3, TEPCO found that the bearing ring was broken into three pieces: one piece loose in the pump, another stuck on the upper impeller, and another inside the reactor vessel.

The unit 1 pump was manufactured in the U.S. by Byron-Jackson Co., but the unit 3 pump was made in Japan by EBARA Co.

"Preliminarily, it looks like there are identifiable differences between the way the rings are welded here and in Japan, and some design differences," said Don Grace of the BWR Owners Group. "They use an automated welding process, and we use a manual one," he said. "They also have an electrical system that uses 50 cycles per second versus our 60 cycles. So the Japanese end up with bigger components (electric motors) and more stresses."

MITI officials believe that the cracking was caused by component stresses induced by water flow, according to NRC. "They consider that this problem does not depend on BWR types and pump suppliers," said NRC Office of Nuclear Reactor Regulation Director Thomas Murley in a February 3 letter to General Electric, "but it might occur at any plant which used the same welding technique (a fillet weld joining a stainless steel bearing)."

28 février 1989 : des débris de métal trouvés dans les réacteurs

MORE BROKEN METAL FOUND IN FUKUSHIMA NUCLEAR **REACTOR.**

Japan Economic Newswire

KYODO

890228077

MORE BROKEN METAL FOUND IN **FUKUSHIMA NUCLEAR** REACTOR+

FUKUSHIMA, FEB. 28 KYODO

NUCLEAR POWER PLANT TECHNICIANS RECOVERED 23 MORE PIECES OF BROKEN METAL FROM THE TURBINE AND PRESSURE CONTAINER OF A NUCLEAR REACTOR HERE, ACCORDING TO A REPORT OBTAINED TUESDAY FROM TOKYO ELECTRIC POWER CO., THE OPERATOR OF THE PLANT.

THE NEW DISCOVERY SHOWS THAT THE DAMAGE TO THE REACTOR IS GREATER THAN WAS FIRST THOUGHT, AS THE 23 PIECES OF METAL ORIGINATED FROM A DIFFERENT SOURCE THAT THOSE FOUND EARLIER IN THE WATER RECYCLING PUMP.

THE NO. 3 REACTOR AT THE NO. 2 **FUKUSHIMA NUCLEAR** POWER PLANT WAS SHUT DOWN IN EARLY JANUARY AFTER ABNORMAL VIBRATIONS WERE MONITORED IN THE PUMP.

THIS IS SAID TO BE THE FIRST TIME IN THE WORLD THAT BROKEN PARTS HAVE BEEN DISCOVERED IN A PRESSURE CONTAINER.

20 avril 1989 : TEPCO présente des excuses publiques pour la panne d'une pompe

FUKUSHIMA PUMP FAILURE PROMPTS PUBLIC APOLOGY --- Naoaki Usui and Ann MacLachlan, Tokyo

Nucleonics Week

NUC

Pg. 1

Vol. 30, No. 16

The breakdown of a recirculation pump at **Fukushima**-II-3 is turning into a major headache for Tokyo Electric Power Co. (Tepco) and a public relations disaster for the whole Japanese **nuclear** industry. In what industry observers say is an absolutely unprecedented move, Tepco President Shoh Nasu apologized in public last week to the nation and to the **nuclear** industry for the pump fiasco that began January 6 (NW, 9 Feb., 3).

A group of pronuclear local residents demanded that Tepco exert stricter safety control at its reactors, and a special task force named March 1 by the Ministry of International Trade & Industry (MITI) has mapped out its strategy for investigating the incident.

The 21-member special investigating team, headed by Tokyo University professor Mamoru Akiyama, agreed on a six-point action plan aimed at pinpointing the cause of the accident. Their

plan includes investigations, including mockup tests, to analyze why and how the recirculation pump damage took place; investigations of operations management; search for foreign objects; investigation of the soundness of reactor equipment and fuel; and research into preventive measures in engineering, fabrication, installation and operation.

The team, mainly comprising scientists from universities and government laboratories but including no utility experts, plans to set up several subcommittees, officials said. It was not known when the team will come up with conclusion and recommendations, they added.

Tepco's Nasu publicly apologized for the incident at the 22nd annual conference of the Japan Atomic Industrial Forum, Inc. (JAIF) in Tokyo. In an unusually grave tone, he said: "As the president of Tepco, let me express my heartfelt apologies for the accident of a recirculation pump this January at the **Fukushima**-II **nuclear** power plant," Nasu said. "I sincerely regret that the accident has shaken the trust and safety cultivated among local residents...for 23 years...and, consequently, has encouraged the antinuclear movement."

A day after Nasu's unusual apology, representatives of the **Fukushima** prefectural chamber of commerce and local pronuclear residents demanded that the Science & Technology Agency (STA) conduct thorough investigations of the accident as well as study measures to calm local inhabitants' fears. STA has the Atomic Energy Commission and **Nuclear** Safety Commission under its jurisdiction.

The **Fukushima**-II-3 pump first developed minor vibration on the evening of January 1, while running at 1,030 megawatts, MITI earlier reported. Then, at daybreak on January 6, one of its two recirculation pumps registered "wild vibration," which led operators to cut power from 990 MW to 740 MW. Shutdown procedures started at noon January 6, the recirculation pump stopped in the evening, and the reactor was completely shut down early January 7.

Inspection revealed that the ring that holds down the pump's shaft bearing had developed fatigue, and the nearly 100-kilogram ring was dislocated, dropped, and damaged, MITI said in its latest interim report released on March 17. By then, engineers found and recovered one 2.4-kg piece of turbine blade from inside the recirculation piping, five 330-gram bolts in the jet pump, five 12-g washers inside the jet pump and the reactor recirculation pump, and a number of metal pieces inside the reactor vessel and the jet pump. Twenty-three of the metallic pieces were recovered as well as powdery metal, MITI said. The total weight of the powder and fragments is estimated at 25 kg.

Although MITI has not released any further report, Tepco Managing Director and General Manager of **Nuclear** Power Administrations Ryo Ikegame told Nucleonics Week last week that engineers are now removing control rod guide tubes after moving control rods and fuel into the spent fuel pit. The lower part of the reactor vessel is being emptied to permit flushing out all the foreign materials inside the vessel as well as in the fuel bundles.

The accident apparently occurred when a bearing ring of the pump, fabricated for main contractor Toshiba Corp. by Ebara Corp. under license to Byron Jackson of the U.S., dropped onto an impeller. Ikegame believes the drop was triggered by metal fatigue which in turn is thought to have resulted from a faulty weld, Ikegame said. He said the judgment is based on a special pattern observed on the scratched pump bearing surface.

Ikegame said Tepco had found the bearing problem on **Fukushima**-II-1 in June 1988. In July, the part was changed on **Fukushima**-II-4 during that unit's planned outage and on **Fukushima** II-2 in October. The company was planning to change the part on all the affected pumps during scheduled outages, including at **Fukushima**-II-3 beginning January 7. Unfortunately for Tepco, the pump failed just a day before. Two others--**Fukushima**-I-6 and Kashiwazaki-Kariwa-1--are scheduled for bearing and ring change in 1989, Ikegame said.

Ikegame said he has no idea when **Fukushima** II-3 will restart, because " nobody has experience in washing out fuel bundles." He said TEPCO will clean the bundles late this month or early next

month and it will know better after that.

Ikegame, while doubting the accident would cloud the future of the BWR, told Nucleonics Week that Japan's largest utility has for some time been studying the introduction of PWR technology on its system. "Some day we would like to have both types of reactors in our company," Ikegame said. "But it takes time to prepare technical staff." He said even if TEPCO does not use PWRs, in the end "the study will improve the BWR too. We can learn many things." A source at Japan's sole PWR fabricator, Mitsubishi Heavy Industries, Ltd., said his company is beefing up its marketing drive on Tepco.

3 juin 1989 : arrêt d'un réacteur à la suite d'une fuite d'eau

COOLING WATER LEAKS IN FUKUSHIMA NUCLEAR REACTOR. (JAPAN)

Japan Economic Newswire

KYODO

890603039

COOLING WATER LEAKS IN **FUKUSHIMA NUCLEAR** REACTOR+

FUKUSHIMA, JUNE 3 KYODO

A **NUCLEAR** POWER REACTOR AT **FUKUSHIMA** SECOND **NUCLEAR** PLANT IN NORTHERN JAPAN OPERATED BY TOKYO ELECTRIC POWER CO. SUFFERED COOLING WATER LEAKAGE IN THE HEAT EXCHANGER SYSTEM, AND WORKERS STARTED TO STOP THE REACTOR OPERATION, **FUKUSHIMA** PREFECTURAL GOVERNMENT SAID SATURDAY.

IT SAID THE LEAKAGE WAS DISCOVERED AT AROUND 10 A.M. SATURDAY, AND THE WORKERS AT THE 1.1 MILLION-KILOWATT BOILING WATER REACTOR TOOK STEPS TO MANUALLY STOP ITS OPERATION. THE REACTOR WILL STOP BY 6 A.M. SUNDAY, IT SAID.

TOKYO ELECTRIC POWER SAID THE REACTOR TROUBLE IS THE FIRST SUCH ACCIDENT TO HAPPEN AT ITS **NUCLEAR** POWER PLANTS.

SATURDAY'S ACCIDENT INCREASED TO SIX THE NUMBER OF TOKYO ELECTRIC POWER REACTORS WHICH HAVE BEEN CRIPPLED OR SUSPENDED FOR PERIODIC CHECKS.

THE TOKYO-BASED ELECTRICITY SUPPLIER HAS TWO PLANTS IN **FUKUSHIMA** PREFECTURE AND ONE IN NIIGATA PREFECTURE WITH A TOTAL OF 11 REACTORS.

19 juin 1989 : une succession d'accidents dans les centrales japonaises

Japan Bucks Trend, Pushes Nuclear Power BY Michael Berger, Chronicle Asia Bureau Chief

The San Francisco Chronicle

SFC**ED** FINAL

A1

Tokyo Japan, long haunted by a ""**nuclear** allergy" growing out of the atomic devastation it suffered in the last days of World War II, is pushing ahead with plans to increase its already growing dependence on **nuclear** power.

Bucking a trend among developed nations - which includes a standstill in **nuclear** plant construction in the United States and an unprecedented phase-out of **nuclear** stations by Sweden - Japan, France and West Germany are moving in the opposite direction.

[...]

A series of incidents last year at **nuclear** plants in **Fukushima** and Shimane prefectures, however, cast some doubt on that analysis.

The accidents, though apparently minor, went unreported to authorities until days after they were discovered.

In the most serious accident, metal fragments broke loose from a pump at one of the three **Fukushima** plants in January, causing a reactor to be shut down. MEDIA BLAMED

Japan Atomic Industry Form executive Mori blamed the information lag on the media, which he described as ""basically anti-**nuclear**." He said that a ""vicious circle" had been created by reporters' tendencies to report all malfunctions as though they were major accidents - thus making plant managers more reluctant to share information.

The negative media treatment since Chernobyl may be one reason Tokyo Electric Power Co., which operates the **Fukushima** station, announced recently that seven executives had been punished because of the accident. The plant manager has taken early retirement and six executives, including the president, have accepted temporary salary reductions of 10 percent.

Investigations into the cause of the January accident, and a leak discovered early this month in another **Fukushima** reactor, are still in progress.

""A more serious problem," said another industry executive who asked not to be identified, ""is that even though our safety procedures for identifying problems are quite thorough, the workers who are subcontracted to repair defective systems are not always top quality."

Depending on subcontractors to handle the quarterly safety inspections and resulting maintenance work lowers labor costs and helps profits. Unlike U.S. **nuclear** plant maintenance firms, which may provide service for clients nationwide, subcontractors here are local firms that serve only the utility in their area.

Amazingly, the maintenance workers - mostly day laborers or farmers hired on a part-time basis - receive no training from the companies that operate the plants. MINOR ACCIDENTS

An industry report last year revealed that most of the 31 minor accidents over an 18-month period in 1987-88 were the result of careless mistakes by maintenance workers.

Such cutting of corners seems inexplicable considering the financial return of the power companies.

All nine private companies are protected by government regulations from competition, and each serves its own exclusive territory.

Even though revenues fell last year because of utility rate decreases, the nine still reported combined after-tax profits of $3.03 billion.

Although plans are going ahead for the 17 new plants, an industry executive sees trouble down the road.

""We have no balanced **nuclear** energy policy," he said. ""The government is using the current concern about the "greenhouse effect' to rationalize its buildup plan, but we are overcommitted to **nuclear** energy."

There are insufficient resources, he said, for alternative energy research and development, ""nor are we thinking about how to use **nuclear** power more imaginatively, such as for pumping water back to dams for recycling in hydroelectric projects."

20 octobre 1989 : les mesures de sécurité dans les centrales japonaises "sont à même de prévenir un accident grave"

Japan's N-accident prevention measure praised.

Jiji Press English News Service

JIJI

(c) 1989

Tokyo, Oct 20 (Jiji Press) - Japan's exhaustive **nuclear** safety measures are capable of preventing the occurrence of a major **nuclear** power plant accident, the **Nuclear** Safety Commission said Friday in the 1989 White Paper on **nuclear** safety.

The White Paper took up the accidents and problems that have occurred at **nuclear** power plants throughout the world in an attempt to improve the safety of **nuclear** power plants.

While noting that Japan's **nuclear** power plants are considered highly trustworthy throughout the world, it admitted that the occurrence of two accidents at the Tokyo Electric Power Co's **Fukushima** plant in which about 30 kilograms of metal fragments from a damaged recycling water pump fell into the reactor did not reflect Japan's deep experience in **nuclear** safety and vowed to make it an important lesson in framing future safety measures.

Hereafter, it will be important to detect troubles as early as possible, determine the cause, and promptly work out preventative measures where similar accidents or trouble is anticipated, the report said.

26 octobre 1989 : alerte sur le vieillissement des centrales japonaises

JAPANESE UTILITIES WARNED TO GUARD AGAINST PLANT AGING --- Naoaki Usui, Tokyo

Nucleonics Week

NUC

Pg. 2

Vol. 30, No. 43

Japan's commercial **nuclear** power reactors have so far experienced far fewer unscheduled outages than those in other countries, but the country must be more concerned about problems possible toward the end of this century as units age, the fiscal year 1989 **Nuclear** Safety White Paper said.

The 448-page **Nuclear** Safety Commission (NSC) annual report, approved by the Cabinet late last week, analyzed problems and incidents in recent years and detailed measures taken to improve safety, particularly in light of mounting concern among Japanese after the 1986 Chernobyl disaster.

In 1987, in the latest international statistics available, Japan had 0.4 unscheduled outage per unit, compared with 4.6 for the United States, 6.4 for France, 2.5 for West Germany, and 2.1 for Great Britain, the White Paper said.

In FY-88, which ended on March 31, Japan experienced a total of 23 incidents, the White Paper said. Of those, 13 occurred while reactors were in operation, four resulting in automatic scrams and nine in manual shutdowns, it said. In addition, 10 incidents were discovered during scheduled shutdowns, five of which related to damage of steam generator tubes, it said.

During the first eight months of FY-89, eight incidents were reported, three involving BWRs and the rest PWRs, it said. The April-August problems were as varied as a heat exchanger tube leak (**Fukushima**-II-2, June 3), a feedwater pump short circuit (Tsuruga-2, June 28), poor connection of a recirculation pump control relay (Shimane-2, April 10), and intergranular attack (IGA) on steam generator tubes (Genkai-1, April 27), NSC said.

The White Paper, in analyses of incidents by type, reported that there have been 43 incidents related to the BWR recirculation pump system over the 8.5 years from April 1981 to August 1989. Of the 43, six involved pumps and motors, while 19 involved electrical and measuring instrumentation, the White Paper said.

The paper presented as a typical BWR incident two recirculation pump problems at the 540-MW Hamaoka-1, reported in August 1987 and February 1988. Two pumps tripped in both cases, after deteriorating sealing caused the pumps' electromagnetic switches to burn, it said. The worn-out switches were replaced, but improved replacement management is called for, the report said.

The disabled recirculation pumps, however, did not lead to neutron flux vibration as happened at LaSalle-2 in the U.S. in March 1988, the commission noted (NW, 30 June, 1). Core stability evaluation before construction is mandated in Japan, which makes the chances very low that a reactor would develop flux vibrations while in operation, the NSC report said.

"An important lesson" for BWRs, the report said, must be learned from the January 1989 trouble at the 1,100-MW **Fukushima**-II-3, in which a recirculation pump bearing ring dropped off, disintegrated, and damaged the reactor vessel (NW, 24 Aug., 3). Although the White Paper did not present a final judgment on the incident since "investigations are still underway," it stated that the reactor should have been shut off on January 1 when abnormal vibration was first detected. It was not until January 7 that the reactor was shut. The commission said the lesson from the incident was

that lessons from "two earlier bearing ring damage incidents (at the unit) had not been fed back sufficiently, and that, as a result, foreign objects were allowed to penetrate inside the reactor, making the situation worse."

[...]

Wear and tear caused by aging is attracting special attention at NSC, as Japan has been operating **nuclear** power plants for over 20 years, with the oldest reactor having accumulated more than 100,000 hours of operation. "The design lifespan of a **nuclear** facility is said to be 30-40 years," the NSC report said. "We will start to see facilities reaching that lifespan toward the end of this century....Consequently, it will become more and more critical to accurately evaluate the life of such facilities from now on."

As two examples of wear-and-tear incidents, NSC presented the January 1989 incident at the Tokai-1 gas-cooled reactor, commissioned in July 1966, and the Hamaoka-1 recirculation pump damage. In the Tokai-1 case, a cable tray dropped off after its surface had oxidized in the high-temperature carbon-dioxide atmosphere and triggered deformation of the tray's metal suspension, NSC said.

Thorough implementation of "safety culture"--early discovery of wear of equipment as well as preventive safety measures, including proper repair and replacement--is critical in coping with problems caused by aging, the report said. It also stressed high-level quality control throughout all phases of engineering, fabrication, installation, and operation of **nuclear** units.

Despite Japan's high level of operator training, human factors are still contributing to **nuclear** power plant incidents, the White Paper said. On the engineering level, a faulty instrument circuit drawing triggered automatic shutdown during the test run of Shimane-2 in July 1988, it said.

The wrong signal cable was removed in March 1988 at Tsuruga-2, resulting in automatic shutdown of the 1,160-MW PWR; five months later, a welded portion of the flexible tube was overstressed and cracked, forcing operators to manually scram the reactor, NSC pointed out. All these incidents eventually led to revision of manuals and procedures, it reported.

Constant care and improvement of procedures, building up data bases on human errors, simulator training, and other measures are promoted by the Japan Atomic Research Institute, the **Nuclear** Power Engineering Center, and the Central Research Institute of the Electric Power Industry, the White Paper said.

In an appendix, the White Paper printed a dozen "most frequently asked questions" about **nuclear** power plant safety, with brief answers, an editorial format adopted for the first time in last year's report.

30 novembre 1989 : l'AEC déclare que malgré les accidents, le Japon n'abandonnera pas l'énergie nucléaire.

JAPAN AEC SAYS NUCLEAR IS NEEDED AND WORLD IS NOT ABANDONING IT --- Naoaki Usui, Tokyo

Nucleonics Week

NUC

Pg. 7

Vol. 30, No. 48

The industrialized West is not at all stampeding to dump **nuclear** power generation, and atomic energy will remain the core of Japan's energy structure, but only with the "understanding" of people, the Atomic Energy Commission (AEC) stressed in its fiscal year 1989 Atomic Energy White Paper, approved by the Cabinet recently.

The annual White Paper also said Japan has been--and will continue--expanding its international cooperation in the field, shifting its efforts from attempts to catch up with advanced countries to creative initiatives of its own, particularly in **nuclear** fusion, safety research, and radioactive waste treatment technologies.

The AEC report, discussing public acceptance, expressed regret over the January 1989 recirculation pump accident at the **Fukushima**-II-3 BWR (NW, 9 Feb., 3). "There is no denying the incident ended up casting a shadow over citizens' trust in **nuclear** power generation," the 363-page paper stated.

The AEC argued that each country is mapping out its own energy policy that reflects its demand trend, geographic conditions, and available resources. "The number of the world's **nuclear** power plants is steadily increasing, and it can not be said that atomic power generation is suffering an overall setback," AEC said. For example, the West German decision to scrap its own spent fuel reprocessing plant (NW, 8 June, 3) was based on economic considerations against the backdrop of the 1992 European Community integration, and does not alter the nation's basic policy of using reprocessed fuel, it said. Italy and Austria, which use much less power than Japan, can import electricity or depend on non-**nuclear** power sources, it theorized.

The United States commissioned seven new **nuclear** plants in 1988, becoming the first country with more than 100-million kilowatts, or 19.5% of capacity, in **nuclear** energy, the White Paper said. The shutdown of Rancho Seco, it said, resulted mainly from poor capacity factors which made it economically impractical.

With this background, **nuclear** power generation should play a core role in Japan's "best energy mix," the report said. In FY-87, **nuclear** accounted for 26.6% of total electricity generated, showing excellent capacity factors compared with other **nuclear** countries, it noted.

Nuclear's importance becomes more evident in light of the necessity of lowering Japan's dependence on petroleum, rapidly growing domestic energy demand, global environmental destruction, and poor prospects for renewable energies such as solar and wind, it said.

This was the first time AEC linked growing domestic energy demand with the need for **nuclear** power. Domestic energy consumption increased 4.8% and 5.4% in FY-87 and FY-88, respectively, it said. The paper did not give a forecast for FY-89 since the Ministry of International Trade & Industry is currently revising its backbone Long-Term Energy Demand-Supply Forecast, AEC officials said.

The FY-89 White Paper spent 12 full pages--compared with 12 lines last year--stressing Japan's international initiatives in **nuclear** utilization. For instance, "it was a notable achievement that Japan took the initiative in proposing an international cooperation project, Omega Project, to exchange information on nuclide partitioning and transmutation technologies, which was formally decided by the OECD NEA (**Nuclear** Energy Agency) in June 1989," it said. Japan should contribute "actively and positively" to the international **nuclear** community, including the industrialized countries, developing world, and global organizations, the paper said, listing a number of ventures underway.

The paper's reference to public acceptance was slightly subdued compared with last year. In addition to pointing to the **Fukushima** incident, it called for more meticulous and open dialogue

with the public. Government and industry efforts are still insufficient in terms of "understandability and two-way character," it said.

"There is no denying that **nuclear** power plants and fuel cycle facilities have potential danger since they deal with radioactive substances," the White Paper said. "But it is important to generate a national consensus based not on emotional fear but on correct understanding."

Critics, however, said that the FY-89 White Paper, in its not-too-invisible efforts to brush off antinuclear activism, often lacked objectivity. For example, the Rancho Seco shutdown certainly resulted from economic problems, but its low capacity factors resulted from safety problems, they pointed out.

8 janvier 1990 : une accumulation d'accidents en 1989

Operating rate rises for nuclear plants.

Jiji Press English News Service

JIJI

Tokyo, Jan 8 (Jiji Press) - Japan's 37 commercial **nuclear** power plants operated at an average 72.3 pct of their total capacity in 1989, up 1.9 percentage points from 1989, the Natural Resources and Energy Agency said Monday.

But accidents and troubles pushed the operating rate down by 2.3 points, the largest in eight years, the agency said.

This indicates that last year's accidents and troubles were more frequent than in the previous years.

The accidents in 1989 included a coolant leak at the No 1 reactor of Kansai Electric Power Co's Oi **nuclear** power station in Fukui Prefecture.

A pump breakdown, which has forced a reactor to suspend operation for almost one year, was not counted as an accident in calculating the adverse effect of accidents and troubles on the operating rate.

This accident was found during regular checks at the No 3 reactor of Tokyo Electric Power's second **Fukushima nuclear** power station in **Fukushima** Prefecture.

23 février 1990 : arrêt du réacteur 2 en raison d'une panne sur une pompe

PUMP DEFECT BLAMED FOR JAPAN'S NUCLEAR MALFUNCTION.

Reuters News

LBA

TOKYO, FEB 23, Reuter - The Ministry of International Trade and Industry (MITI) blamed a defect in the core cooling system for the malfunction at a **nuclear** power plant owned by Tokyo Electric Power Co Inc.

An unusal decline in output forced the company to halt the operation of one of its atomic power plants in January 1989.

A team of MITI experts determined that incomplete welding in a primary loop recirculation pump caused damage to nuts and bolts in the pump. The company is clearing the unit, which is still closed, of this debris in the reactor pressure vessel.

Tokyo Electric's **nuclear** power plants have a total output capacity accounting for about a third of Japan's overall atomic energy supply capacity of 29.28 million kilowatts.

The company has suffered a 10 pct drop in its **nuclear** power generation since the shutdown of the third unit of **Fukushima** No. 2 plant in northern Japan, a Tokyo Electric spokesman said.

It has been making up for the shortage by buying power from other power companies.

"This type of defect have never been found in Japanese **nuclear** plants. There have been no reports in other nations about a similar malfunction," a MITI official said.

MITI urged Tokyo Electric and other Japanese power firms to change the same type of rings in the pumping system, which is designed to cool the reactor pressure vessel.

The stoppage of the pumps would push up the temperature in the vessel and reduce the number of neutrons, causing the reaction rate to slow, the MITI official said. All Japan's 37 **nuclear** power plants except one have undergone or are undergoing the procedure to change the parts, he said.

20 mars 1990 : la Haute-Cour de Sendai repousse une demande d'arrêt de la centrale de Fukushima

COURT DISMISSES SUIT AGAINST NUCLEAR PLANT.

Reuters News

LBA

TOKYO, March 20, Reuter - Japan's anti-**nuclear** movement suffered a setback on Tuesday when a court rejected a legal suit by a citizen's group which wanted to halt operations of a **nuclear** power plant north of Tokyo.

The Sendai High Court dismissed a suit demanding the regional government revoke the licence of a **nuclear** generator in **Fukushima** Prefecture that was temporarily closed after plant officials discovered mechanical faults in January 1989.

Japanese courts have dismissed four other civil suits against **nuclear** power plants. The country is pursuing an aggressive policy to increase the **nuclear** share of its electricity output.

Japan's 35 **nuclear** reactors provide about 30 per cent of its electricity and the government plans to build a further 18 to boost the proportion to 60 per cent.

COURT REJECTS FUKUSHIMA CITIZENS' ANTINUCLEAR SUIT. (FUKUSHIMA GENERATING PLANT)

20 mars 1990

Japan Economic Newswire

KYODO

900320035

COURT REJECTS **FUKUSHIMA** CITIZENS' ANTINUCLEAR SUIT+

SENDAI, MARCH 20 KYODO

A HIGH COURT HERE DISMISSED TUESDAY AN APPEAL BY CITIZENS OF **FUKUSHIMA** PREFECTURE TO HALT THE OPERATION OF A LOCAL **NUCLEAR** FACILITY, IN THE FIRST RULING OF ITS KIND SINCE THE ATOMIC DISASTER IN CHERNOBYL.

THE SUIT, BROUGHT BY 33 LOCAL RESIDENTS, SAID THE GOVERNMENT'S FAILURE TO CONDUCT A SAFETY INSPECTION OF THE TOKYO ELECTRIC POWER CO.'S TROUBLED **FUKUSHIMA** GENERATING PLANT WAS A VIOLATION OF NATIONAL SAFETY CODES.

HUMAN ERROR AND COMPLICATIONS RESULTING FROM MECHANICAL FAILURE, COULD NOT BE FORSEEN BY DESIGNERS, AS SHOWN IN THE CHERNOBYL ACCIDENT, THE CITIZENS ARGUED.

BUT PRESIDING JUDGE YOSHIO ISHIKAWA, IN DISMISSING THE SUIT, SAID GENERATOR SAFEGUARDS AT **FUKUSHIMA** WERE MORE THAN SUFFICIENT TO PREVENT A CHERNOBYL-STYLE DISASTER.

A GOVERNMENT REPORT ISSUED LAST MONTH CITED BOTH OPERATIONAL ERROR AND MECHANICAL FAILURE AS THE CAUSE OF AN ACCIDENT IN JANUARY, 1989 AT THE **FUKUSHIMA** PLANT'S NO. 2 GENERATOR.

OPERATORS STOPPED THE PLANT ONE WEEK AFTER IRREGULARITIES WERE FIRST NOTICED, AND LATER ALMOST 50 KILOGRAMS OF BROKEN PUMP FRAGMENTS WERE FOUND IN AND AROUND THE REACTOR'S CORE.

THE RESIDENTS ALSO CALLED FOR SAFETY CHECKS TO INCLUDE PROCEDURES FOR RECYCLING SPENT **NUCLEAR** FUEL AND THE DISPOSAL OF RADIOACTIVE WASTES. PRESENT CHECKS LIMITED TO THE REACTOR DESIGN WERE INADEQUATE TO GUARD AGAINST ACCIDENTS, THEY SAID.

BUT ISHIKAWA SAID IN HIS RULING, "THERE IS NO ROOM FOR DOUBT ABOUT THE RATIONALITY OF SAFETY INSPECTIONS."

HE SAID **FUKUSHIMA**'S LIGHT-WATER REACTOR WAS DESIGNED TO CONTROL THE **NUCLEAR** FISSION REACTION IN THE EVENT OF A SURGE IN RADIATION OUTPUT AS OPPOSED TO THE SYSTEM OF LEAD RODS USED TO ADJUST THE REACTION SPEED IN THE CHERNOBYL GENERATOR.

TUESDAY'S DECISION REPRESENTS THE FIFTH DISMISSAL IN JAPANESE COURTS OF CITIZEN'S SUITS TO SUSPEND THE OPERATING LICENSES OF **NUCLEAR** FACILITIES ON SAFETY GROUNDS. **NUCLEAR** POWER PROVIDES SOME 26.6 PERCENT OF JAPAN'S ELECTRICITY SUPPLY.

29 mars 1990 : La Haute-Cour de Sendai déclare que les centrales sont bien conçues et ne peuvent pas causer de catastrophes

JAPAN COURT SAYS BASIC PLANT DESIGN SAFE BUT WARNS INDUSTRY --- Naoaki Usui, Tokyo

Nucleonics Week

NUC

Pg. 4

Vol. 31, No. 13

A Japanese appeals court declared that the basic engineering of the country's **nuclear** power plants is sufficiently safe and reliable, but said strict attention must be paid to component manufacture and operational safety. While turning down a 16-year-old request by plant neighbors to scrap a Tokyo Electric Power Co. (Tepco) BWR, the court warned the industry against supplying defective equipment--for example, recirculation pumps that break down during operation.

The Sendai High Court in northern Japan ruled last week on the suit, filed in 1974 by a group of 33 citizens who had sought nullification of the construction permit for Tepco's **Fukushima**-II-1 BWR. The plaintiffs charged that the government's safety evaluation and scrutiny of the design was insufficient.

The opinion, handed down by presiding Judge Yoshio Ishikawa and two other officers, was the fifth court verdict in Japan that essentially endorsed the government's **nuclear** plant safety evaluation procedures. The angry plaintiffs declared they will appeal the case to the Supreme Court.

In their **Fukushima** challenge, the plaintiffs argued that government safety evaluation standards are too vague and radiation dose limits have not yet been firmly established, and charged that the accidents at Chernobyl-4 and Three Mile Island-2 reflect flaws in basic **nuclear** engineering.

The local residents originally brought their case to the **Fukushima** District Court in 1974, about two years after construction of **Fukushima**-II-1 had been approved by the Ministry of International Trade & Industry (MITI). The **Fukushima** court ruled in 1984 that the government's safety

evaluation was viable.

The March 20 ruling by the Sendai appeals court said that the reactor's basic design sufficiently guarantees safety and can prevent reactivity-related accidents such as what happened at Chernobyl.

However, the court warned that keeping operational **nuclear** power plants safe "is another matter....For a **nuclear** power plant to be safe, detailed engineering, construction work and operation must be made strictly in accordance with that basic engineering which was proven safe," the verdict said. "Consequently, those engaged in various phases must make their best efforts to secure safety."

"For example, they must not manufacture recirculation pumps which break down (easily), or make mistakes the operators at Chernobyl made," Ishikawa said, in a pointed reference to the defective recirculation pump component that triggered a major incident at the **Fukushima**-II-3 BWR in January last year (NW, 1 Mar. '89, 1).

"It is believed that **nuclear** power generation cannot be discontinued, and, if so, there will be no other way but to promote **nuclear** power generation by improving safety through research," the judges concluded after commenting on the general energy situation. "What would be the alternative to **nuclear** power generation when and if it were to be discontinued?" they asked.

Despite its mixed sentiments, the ruling was welcomed by government and industry. Tepco President Sho Nasu called it meaningful in securing a stable supply of electricity, and Masashi Yamamoto, director general of MITI's Agency of Natural Resources & Energy (ANRE), told reporters he highly appreciates the verdict which basically supported the government's stance.

The plaintiffs, however, were furious. Their chief attorney, Sanzo Onoda, said the judges lack knowledge of **nuclear** power plants and their verdict, which simply "parrots" government claims, is worse than "the propaganda leaflets Tepco scatters all over the place."

Industry watchers believe that the latest verdict reflected the limits of the court in technical **nuclear** questions. "It judged that basic engineering is OK," said one observer. "But it ducked giving any judgment of its own on detailed engineering and other fields; it only said that that was 'another matter.'"

14 avril 1990 : les accidents nucléaires font douter les Japonais

RECENT INCIDENTS BEGIN TO TURN JAPANESE AGAINST NUCLEAR POWER.

The Economist

EC

66

After circling the globe for four years, the political fallout from Chernobyl is at last settling on Japan. With Hiroshima still vivid in their minds, the Japanese have never been comfortable with the idea of **nuclear** power. Still, 27% of Japan's electricity is now generated by **nuclear** plants, and people seemed ready to go along with the government's plans to raise that to 40% by 2000. If nothing else, more **nuclear** power makes Japan less beholden to imported oil. But a spate of recent incidents has turned the Japanese against **nuclear** power.

The industry had been hoping to put a friendly face on **nuclear** power by sending the Mutsu, Japan's first and only **nuclear** ship, on a year-long scientific cruise around the world. The vessel has been in dry-dock for the past 16 years; technicians from the Japan Atomic Energy Research Institute have been reinforcing its radiation shield to stop the reactor from leaking gamma rays. That done, the ship's reactor was supposed to be brought up to power over the past few weeks. This task was so badly bungled that even the **nuclear** officials in charge were frightened. The residents of Aomori, the big city closest to the Mutsu's home port, have been up in arms.

The Mutsu's tests were hurriedly suspended, but the Japanese public's fragile faith in **nuclear** power had been shaken yet again. Already there had been press reports about a long chain of mechanical failures at one of Tokyo Electric Power Company's big **nuclear** plants in **Fukushima**. Because of accidents, several of the reactors in **Fukushima** had to be shut down. One of the reactors has been out of action for more than a year. Plant failures of various sorts left Japan's 37 **nuclear** power stations operating at only 70% of capacity last year-the lowest figure in seven years.

The **nuclear** lobby had thought things were looking up. The **nuclear**-friendly Liberal Democrats had been swept back to power in February, beating a Socialist party that promised not to allow any new **nuclear** plants and to phase out existing ones. That included the **nuclear** industry's big new complex near the village of Rokkasho, in Aomori prefecture (home, too, to the ill-fated Mutsu).

Six years ago the Federation of Electric Power Companies (the umbrella for Japan's seven big electrical utilities) chose Rokkasho as the site for all its **nuclear**-fuel work. Other countries have scattered the various parts of the **nuclear**-fuel cycle in different places. Despite the risk from earthquakes, Japan has put all its **nuclear** eggs-from enriching the uranium in the first place to reprocessing the spent fuel and then storing the radioactive waste-in the one Rokkasho basket.

The local authority was delighted-indirectly, it was a part-owner of the site that the federation bought for its three **nuclear**-fuel plants-but the local people have been much less enthusiastic. Last summer 172 residents sought a court order to get the government's approval of the fuel plants overturned. When the lawsuit stalled, the opponents took to the streets. The sleepy, conservative town has become politicised. So much so that, four months ago, it threw out the Liberal Democrat-backed mayor, who favoured the plants, and elected a Socialist who had been demanding that construction at the site be stopped.

Even Japanese farmers are rebelling. Having lately seen on television how the Russians are still having to destroy crops affected by Chernobyl, they worry about contamination of their own crops in the event of a Japanese **nuclear** accident. Nervous Liberal Democrats have taken heed. In the February election several ruling-party candidates contesting seats with **nuclear** facilities nearby declared themselves anti-**nuclear**.

The Ministry of International Trade and Industry is just about to revise its forecast of Japan's energy needs upwards by a smidgen (after lowering it six times since 1975), to take account of the country's new taste for bigger cars, fancier appliances and more personal consumption all round. But any thoughts that **nuclear** energy might profit from this increased demand have disappeared. The 1987 forecast that **nuclear** power would account for 40% of Japan's electricity in 2000 would have required 53m kilowatts of **nuclear** capacity. Some 16 **nuclear** stations are now being built. When they are finished, they will raise Japan's **nuclear** capacity from today's 29m kilowatts to 46m kilowatts. Then what?

Not much. Many think that will be the high-water mark of Japan's **nuclear** industry. A consensus is forming that the best fuel for Japan is natural gas. It produces no sulphur, no tar and relatively small amounts of carbon dioxide, the greenhouse gas. It can easily be liquefied for shipping. And, best of all, there is plenty of it around-especially in friendly nearby countries like Indonesia, Malaysia, Brunei and Australia, where Japanese power companies have long-term contracts and all the refrige rated vessels they need for transporting the fuel back to Japan.

MITI reckons that gas-fired electricity is no bargain. It costs about the same as electricity from coal or oil, and 10% more than from **nuclear** power; but, as America's power companies have discovered over the past 15 years, **nuclear** energy can turn out far more expensive than it looks on the drawing board.

28 juin 1990 : manifestation anti-nucléaire lors de l'assemblée annuelle des actionnaires de TEPCO

RARE ANTINUCLEAR CHALLENGES SET FOR TEPCO ANNUAL MEETING --- Naoaki Usui, Tokyo

Nucleonics Week

NUC

Pg. 9

Vol. 31, No. 26

Tokyo Electric Power Co. (TEPCO) officials were anticipating a less-than-smooth general shareholders' meeting tomorrow (June 28) as hundreds of antinuclear activists were planning to attend to question **nuclear** power plant safety. Their questions are expected to be fueled by recirculation pump seal problems that occurred at two TEPCO units in mid-June.

Hundreds of antinuclear power plant activists, armed with their own stock certificates, are planning to throw questions or otherwise embarrass annual general shareholders meetings of Japan's nine commercial utility companies. Tactics engaged in by antinuclear hawks have taken a new twist over the last several years as they started buying 100 shares per person, the legal minimum to qualify to attend annual meetings. To management, nothing is more important than that meeting to show how the corporation has been doing the right thing.

Tomorrow, for TEPCO's most important corporate ritual of the year, an estimated 250 antinuclear Japanese were planning to attend the shareholders' session. TEPCO is Japan's largest utility, operates 12 **nuclear** plants, and maintains one-third of the nation's total electricity market.

TEPCO officials were already anticipating difficulties when two 1,100-MW BWRs at **Fukushima**-II almost simultaneously developed recirculation pump seal problems and had to be shut, heavily cutting into TEPCO's capacity at a time when power demand was rising. Both **Fukushima**-II-1 and -4 had to be taken off line to replace faulty seals from June 13 to June 16, and unit 4 was again shut almost immediately because its new seal was faulty.

The incidents themselves were minor--none of them of the magnitude of the disintegrating recirculation pump at **Fukushima**-II-3 in January 1989 that forced the company president to publicly apologize--but they meant that six of TEPCO's 12 units were incapacitated. **Fukushima**-I-2 and -3 and **Fukushima**-II-2 and -3 were all down for routine maintenance and refueling. The incidents came when temperatures in Japan were unusually warm, boosting electric power demand. TEPCO reported a peak demand June 19 of 40.71-million kilowatts, for which it had to borrow from surrounding utilities.

Public affairs personnel of TEPCO have been snowed under since then by preparatory work to survive the June 28 session, with the meeting scheduled to start at 10 a.m. "We don't know how long it will last," a tired staff member told Nucleonics Week. "And we don't even know how many shareholders will show up."

Last year, the annual TEPCO shareholders meeting took 130 minutes and had 650 attendants. Those 130 minutes were unusually long by Japanese standards, under which all management proposals and reports are railroaded through in 10 to 15 minutes. Indeed, Japanese corporate culture cherishes "smooth" shareholders meetings and, consequently, detests lengthy and stormy ones.

But for the year 1990, neither TEPCO nor eight other utilities were expecting a sweet session. Activists, armed with a total of 5,000 questions about **nuclear** power plant safety, were even demanding that TEPCO set up babysitting services for the day because many of the activist-shareholders are young mothers. TEPCO, at press time, was still refusing, claiming that the meeting was not intended for children.

Meanwhile, industry speculation that former TEPCO Executive Vice President Ryo Ikegame, who was demoted to a Managing Director after the **Fukushima**-II-3 incident, might be reinstated at the upcoming meeting, was denied by TEPCO officials.

12 juillet 1990 : le ministère japonais déclare que le réacteur 3 est en état de marche

MITI SAYS FUKUSHIMA-II-3 SAFE BUT NSC VOWS FURTHER SCRUTINY --- Naoaki Usui, Tokyo

Nucleonics Week

NUC

Pg. 3

Vol. 31, No. 28

Japan's Ministry of International Trade & Industry (MITI) officially reported last week that the **Fukushima**-II-3 BWR, shut off since January 1989 after a recirculation pump bearing ring disintegrated, has been repaired sufficiently to resume operation. However, the **Nuclear** Safety Commission (NSC) decided to have its 49-member Reactor Safety Specialist Subcommittee scrutinize the 70-page final report, closing, in effect, the way for Tokyo Electric Power Co. (TEPCO) to use the 1,100-MW plant during the peak demand period from mid- to end-August.

MITI's final document, accompanied by 34 pages of illustrations and tables, followed three interim reports submitted by the Agency of Natural Resources & Energy (ANRE), MITI's utility supervising wing, and the nation's largest utility operator. NSC's reactor safety subcommittee, expected to be chaired by Kazuo Sato, Japan Atomic Energy Research Institute (JAERI) Board director, will hold its first meeting late this week or early next week. The large subcommittee takes a long startup time because it requires a quorum for a majority, a Science & Technology Agency (STA) source said, hinting the evaluation will not be completed by the peak demand period.

The MITI report said it is estimated there is a maximum 47 grams of powdered metals, including some 200 particles of 0.3 millimeter or more in diameter, still unrecovered and remaining inside the reactor pressure vessel, piping, and other equipment. In addition, four larger metal pieces--maximum 1.6 grams in weight, measuring up to 42.4 x 9.4 x 2 mm--are thought to be stuck inside. The figures are 95% correct, MITI claims, based on recovered debris and their locations. Debris remaining inside fuel and the channel box being used at the time of the incident were excluded from this estimation because "it has not yet been decided whether they are to be used again or not," the report said.

Before a thorough "washing" operation, engineers recovered 185 "relatively large" metal pieces, excluding the debris of washers, MITI said. After the rinsing, no piece larger than 0.5 millimeter in diameter has been discovered by naked eye inspection, it said. "The possibility is small that relatively large metal pieces over 0.5 millimeter in diameter still remain inside," the report said. Concerning finer metal powder, the report estimated that 9 to 47 grams still reside inside the reactor components.

"Chances that these metal powders and debris might impact future plant operation is very small," the MITI report said. "Even if some might impact the operation, it has been confirmed that they will not impact safety." Bearing, rotor, casing cover, and other components of the recirculation pump were replaced, and other equipment and fuel turned out to be either "unaffected, or free of any influence that is related to soundness," the MITI inspectors concluded.

"As a result of these evaluations...there has not been recognized any item that might cause a safety problem in operating the plant," MITI said. But it also called for implementation of new policies proposed in February--such as introduction of bearing rings welded by the complete penetration method or made by the integrated centrifugal casting method--as well as more meticulous pre-operational safety confirmation and, at least tentatively, reinforcement of operation supervising efforts.

"A **nuclear** power plant under operation usually carries dozens of kilograms of metal powder, such as rust and slime," said an STA source. "In the case of **Fukushima**-II-3, what it has is 1/1000 of that volume." He was obviously hinting that he thinks the plant is safe enough for immediate resumption of operation.

However, the January 7, 1989 incident came amid the public's mounting skepticism about **nuclear** safety, and restart immediately after the MITI report might trigger a political bombshell, many observers agree. Indeed, the annual general shareholders meeting of TEPCO on June 28 turned out to be a shouting match between antinuclear activist/shareholders and pro-management stock owners, they pointed out.

The 1,100-MW reactor developed irregular vibrations on New Year's Day last year, but operators, after slowing it down, continued operation. Then, on January 7, the vibration became bad enough for plant personnel to manually shut it down--only three days before the annual maintenance outage was scheduled to start. Analysts later found insufficient penetration by welds of the reactor recirculation pump bearing ring led to stress-originated metal fatigue, which eventually triggered the 100-kilogram component to disconnect. Upon the impact, the bearing ring, bolts, turbine blades, turbine blade rings, casing, and casing covers were damaged. Further, five bolts, five washers, and a fragment of turbine blade were disconnected and a total of 31.3 kilograms of metal was lost by abrasion (NW, 9 March '89, 1). This incident is considered the worst accident in three decades of Japanese **nuclear** power generation history, though there were no off-site consequences.

9 août 1990 : TEPCO attend la remise en marche du réacteur 3 en raison d'une forte demande d'électricité,

TEPCO FACES RECORD POWER DEMAND, WAITS FOR FUKUSHIMA II-3 RESTART --- Naoaki Usui, Tokyo

Nucleonics Week

NUC

Pg. 5

Vol. 31, No. 32

An expert committee of the Japanese **Nuclear** Safety Commission (NSC) is continuing to assess the safety of restarting Tokyo Electric Power Co.'s (TEPCO) **Fukushima** II-3, as TEPCO struggles to respond to record demand without the 1,100-MW BWR.

The unit has been shut since January 1989 when a recirculation pump bearing ring disintegrated. Last month, the Ministry of International Trade & Industry (MITI) said the unit was satisfactorily repaired and could resume operation, but the NSC wanted to review the repairs first (NW, 12 July, 3).

Following two sessions in July, an NSC expert subcommittee on August 3 visited manufacturing plants of Toshiba Corp. and Ebara Corp., fabricators of the reactor and the pump, respectively. They inspected, among other things, test equipment used in the past-incident investigation, officials said. The 22-member subcommittee is to follow up the visit with another inspection tour on August 22, to **Fukushima** II-3 itself, at the site north of Tokyo, NSC officials said. An evaluation meeting is to be held August 29.

Although it is theoretically possible that the August 29 meeting might authorize the plant's restart, observers agree that the chance is very slim, partly because it might make NSC look like it has been railroaded into approving resumed operation. A September restart is seen as the earliest feasible. Critics are already claiming that last week's inspection of the two manufacturing plants--consisting predominantly of observing test equipment and videos, according to officials--was nothing more than "a school excursion to get second-hand information."

Meanwhile, TEPCO without **Fukushima** II-3 is in a very hot situation, literally. The summer is unusually hot, and so far power demand has been making a record virtually every day. Lack of rain is drying up hydropower reservoirs, crippling hydro generation. "And now, oil prices are certainly rising in the wake of the Iraqi invasion of Kuwait," one expert noted.

6 septembre 1990 : report du redémarrage du réacteur 3

FUKUSHIMA II-3 OUTAGE IS NOW EXPECTED TO EXTEND TO OCTOBER --- Naoaki Usui, Tokyo

Nucleonics Week

NUC

Pg. 4

Vol. 31, No. 36

Japan's **Nuclear** Safety Commission (NSC) experts were to meet September 5 to discuss the feasibility of restarting the 1,100-MW **Fukushima** II-3 BWR, closed since January, 1989, but informed sources believe it will take at least another month before the team gives the final approval.

Despite shortfalls such as absence of its own test capability and enforcement authority, the NSC power reactor subcommittee headed by Kazuo Sato, board director of the Japan Atomic Energy Research Institute, is displaying meticulous efforts to verify the reactor's safety, observers agree. "And that's despite lobbying and pressures from the utility industry and the Ministry of International Trade & Industry (MITI)," one well-placed observer noted.

"We expect heated arguments," declared Sato at the plant immediately after his August 22 field inspection of the site north of Tokyo. "And the issue shall not be closed until we get answers to every single question our members might have. I don't know when we can reach a conclusion." Nineteen of the team's 22 members, followed by dozens of reporters, visited the site, running from one un-air-conditioned place to another on the scorching summer day.

The team inspected samples of debris--metal fragments found at the bottom of the reactor vessel, from the turbine rotor and bearing ring of the troubled recirculation pump--as well as inside the pressure vessel and the reactor core during the whirlwind, 6.5-hour visit. Lit up by blue illumination, the core is now being reloaded, a process Tokyo Electric Power Co. (TEPCO) expects to take until the end of September.

The team met on August 29 for the third time to discuss the **Fukushima** II-3 issue. The meeting focused on the sequence of the bearing ring damage, the sturdiness of the new ring and of piping, support structures, and components after unusual vibration, and evaluation of residue metal powder inside the reactor. There are skeptics among the members on MITI figures--17 grams of residue metallic powder in the reactor, for example--one inside source said.

The September 5 meeting is likely to fail to come up with any conclusion on restarting the unit, a well-placed source said. The team is to file its report to its parent, NSC, by September 26, officials said. Then, NSC is to hand TEPCO and MITI its decision. Some observers believe that NSC could authorize the reactor to start operation in early October, but this could not be confirmed officially.

Fukushima II-3 was manually shut down on January 7 last year after developing wild vibrations, caused by disintegration of a recirculation pump. Engineers found that the disintegration resulted from inadequate welding of the pump's bearing ring, which allowed the 100-kilogram piece of steel to disconnect. After investigation, MITI reported to NSC in July that the unit was repaired safely enough to be reconnected to the grid.

At the same time, MITI submitted measures to prevent similar incidents from happening. The proposed measures included introduction of bearing rings welded with the complete penetration method or the integrated centrifugal casing method, and more meticulous pre-operational safety confirmation.

11 octobre 1990 : la NSC approuve le redémarrage du réacteur 3

JAPAN'S NSC APPROVES FUKUSHIMA II-3 RESTART --- Naoaki Usui, Tokyo

Nucleonics Week

NUC

Pg. 2

Vol. 31, No. 41

Japan's **Nuclear** Safety Commission (NSC) approved restart of the 1,100-MW **Fukushima** II-3 BWR October 4, 21 months after a defective recirculation pump component disintegrated and forced the plant off-line. But the NSC criticized the utility industry for not recognizing the incident's precursors and urged further research on detection methods for similar fatigue failures.

The watchdog commission issued its approval after one of its subcommittees came up with a restart recommendation at its eighth meeting on the plant since July. The meetings have been marked by intense debate on and scrutiny of the Ministry of International Trade & Industry's (MITI) analyses and restart proposals, made in July (NW, 6 Sept., 4).

Tokyo Electric Power Co. (TEPCO) will reactivate the unit at the end of October "at the earliest," utility sources told Nucleonics Week. TEPCO must obtain localities' consent, which is a "moral obligation," and then test equipment before the restart, they said.

The 12-page final report by the Power Reactor Subcommittee of NSC's Special Committee on Standards of Reactors essentially accepted as logical and reasonable the MITI analyses and proposals. The 22-member team scrutinized, in particular, three major points on which MITI based its July recommendation that the repaired plant is now safe enough.

First, the subcommittee judged feasible MITI's recommendation to introduce new bearing rigs fabricated by the complete penetration method or integrated centrifugal casting method instead of fillet welding used for the **Fukushima** II-3 component. "It is virtually impossible to totally eliminate resonance," the report said, accepting MITI's recommendation. "And MITI's policy to improve relative strength (of the bearing ring) by changing the cross-section size and form of the welded portion seems practical."

Secondly, the subcommittee accepted MITI's evaluation that impacts and stresses the disintegrated ring caused on the casing--including its ridge portion--and support structure of the pump will not affect safety of the reactor. Piping and accompanying components also were judged safe enough.

Finally, the subcommittee also accepted MITI's estimate that, though there remain up to four pieces of metal and 47 grams of metallic powder inside the reactor, chances are slim that they will harm plant safety.

The October 4 full meeting of NSC approved the subcommittee report, and, by doing so, removal the final procedural barrier to restart. But NSC, in a special statement, scolded the utility industry, saying it should have been aware of the possibility that such a "serious accident" might occur and that it should take more effective safety precautions.

"The operator should have recognized as a serious warning" two similar but minor incidents which

took place in 1984 and 1988 in **Fukushima** II-1, the NSC said. "It (TEPCO) should have studied the cause of such pump damages cautiously and established accident prevention measures in advance."

Part of the recirculation pump bearing ring of the **Fukushima** II-1, also a 1,100-megawatt BWR, separated and landed on the impeller in November 1983. In July 1988, cracking was discovered in the bearing ring replaced after the 1983 incident. Both incidents were judged to have been caused by insufficient welding. After the second mishap, MITI instructed utilities to replace fillet welded rings with complete penetration welded models, but did not require the backfit until the next scheduled maintenance outage for each unit.

In January 1989, what some officials call "the most serious" accident in Japan's three decades of **nuclear** power generation occurred, as the bearing ring of the **Fukushima** II-3 disintegrated, and debris found its way into the pressure vessel and the reactor coolant system. The mishap came only two days before the scheduled maintenance outage.

The NSC "judges that the pump has been repaired to a status which casts no safety problems, but it is suggested (by the NSC) that the pump undergo thorough inspection--with the casing opened--during the next regular inspection outage," the NSC said.

The NSC's "expectation is that positive actions be taken, including research and development of irregularity assessment technology and its implementation, so that a similar accident will not take place again."

SE Comment/Analysis

23 octobre 1990 : "les ingénieurs japonais estiment que leurs centrales sont virtuellement à l'abri des tremblements de terre"

Safety comes first in Japan's bid to build more nuclear plants BY Kwan Weng Kin, Tokyo Correspondent

Straits Times

STIMES

KASHIWAZAKI (Niigata Prefecture) - Along a desolate stretch of coastline overlooking the Sea of Japan and near neatly-manicured rice fields, two giant **nuclear** reactors are slowly taking shape.

Next to the cavernous construction sites where 6,000 men toil away under banners that extol safety above everything else, three other identical reactor units are already humming away, providing electricity to cities as far away as Tokyo, which is about 230 km south-east of here.

With the completion in July 1997 of two more units,the US$20 billion (S$34 billion), seven-reactor power station will become the largest **nuclear** facility in the world.

Japan is rushing to build more **nuclear** plants.

A government advisory council's report in June urged the building of at leas t 40 more reactors by 2010 in addition to the existing 38. This will raise the proportion of electricity produced by **nuclear** plants from the present 27 per cent to about 43 per cent.

The proponents of **nuclear** energy say it is the most efficient method of generating electricity and,

apart from the problem of the disposal of spent **nuclear** fuel, it does the least harm to the environment, compared to the burning of fossil fuels.

But experts doubt whether the target can be reached because of mounting opposition by anti-**nuclear** groups.

At Rokkasho village in Aomori prefecture, residents threw out local official s who supported the building of a **nuclear** facility nearby and elected new officials who called for a freeze.

The Rokkasho village, of course, has more to complain about than others. The

proposed facility at Rokkasho is to contain not an ordinary power plant but a storage site for spent **nuclear** fuel, a uranium enrichment plant and a re-processing plant.

Because of such resistance, the report said it now takes about 26.8 years fo r a plant to start operations after the initial proposal. In the 1970s, it took only 7.9 years.

Tokyo Electric Power Company (Tepco), which runs the Kashiwazaki plant, has largely overcome residents' opposition. Initially, officials spent countless evenings talking to residents and also met anti-**nuclear** activists.

Finally, persuasion won the day. Residents also became aware that by playing

host to the power facility, they could expect a windfall in new tax revenues and government grants.

Mindful of this, Tepco eventually decided to site its plant at a location straddling both Kashiwazaki and the neighbouring village of Kariwa in order to spread the goodies around more evenly.

Public relations is considered a very important part of the plant's activities. The constant stream of visitors range from farmers' groups and local politicians to ladies' clubs and high school students all the way from Tokyo.

Surveys indicate that nearly 90 per cent of the Japanese people now support the use of **nuclear** energy.

A few years ago, after the Chernobyl accident in the Soviet Union, there was

a minor panic in Japan.

But officials at the Kashiwazaki plant firmly believe that Japan will not have a similar accident. The superintendent of the Kashiwazaki facility, Mr Takeki Kawahito, said: "We have containment vessels around our reactors, emergency cooling systems and about 20 other safety measures which the Chernobyl plant did not have.

"When the water disappeared from the Chernobyl reactor, the **nuclear** reaction

increased. In the case of Japan, self-regulating systems built into the reactors will stop the reaction once the water is lost."

Kawahito believes that the reactors at Kashiwazaki and other Tepco plants, which are mostly built by Japanese companies under licensing arrangements with the original US manufacturers, are superior to the American facilities.

"The Japanese ones are better in terms of maintenance and quality control. W e also have better quality steel for the housing surrounding the reactors and our electrical mechanism are far superior."

Still, despite the supposedly more advanced technology, breakdowns do occur.

In 1990, the failure of a recyling pump of a reactor at Tepco's older plant in **Fukushima** prefecture led to the shutting down of the plant.

Earlier this year, abnormal conditions in the coolant used in two reactors a t the same **Fukushima** plant, stopped operations for three days.

One major concern of opponents to **nuclear** plants is the fear of a major earthquake. But Japanese

engineers believe their plants are virtually earthquake-proof.

The reactors at Kashiwazaki, for example, are designed to withstand an earthquake three times more powerful than the Great Kanto Earthquake of 1923, which measured 7.9 on the Richter scale and devasted Tokyo and its environs.

But where nature is concerned, Japanese engineers are careful not to put all

their faith in scientific theory.

In one corner of the large control room that monitors the workings of one of

the reactors at Kashiwazaki is a small Shinto altar.

"That," explained the deputy superintendent of the facility with a twinkle i n his eye, "is the secret of our know-how."

25 octobre 1990 : inquiétudes dans le voisinage pour le rédémarrage du réacteur 3

NEARBY TOWNS CAUTIOUS ABOUT RESTART OF FUKUSHIMA II-3 --- Naoaki Usui, Tokyo

Nucleonics Week

NUC

Pg. 7

Vol. 31, No. 43

The move to restart the 1,100-MW **Fukushima** II-3 BWR faced yet another hurdle last week, as mayors of two neighboring towns refused to immediately accept a resumption request by Tokyo Electric Power Co. (TEPCO) President Sho Nasu, utility and local sources told Nucleonics Week.

This is likely to further delay resumption of operation which the utility hoped would come by the end of October, TEPCO sources noted. Although "agreement" of local townships is not a legal requirement, Japanese utilities are extremely sensitive about local reactions.

Mayors Soichiro Yamada of Tomioka and Sadashige Yuki of Naraha on October 17 told Nasu, who visited their town halls, that they wanted to consult with townsfolk and asked the TEPCO chief to come back again with a 100% confirmation that the plant restart would be safe, the sources said.

Nasu's visit to the towns and to **Fukushima** Gov. Eisaku Sato came after the **Nuclear** Safety Commission (NSC) finally ruled that the repaired BWR unit is ready to resume operation (NW, 11 Oct., 2). Fuel has already been loaded, and the plant technically can be started at any moment, a TEPCO spokesman said. The plant has been out since January 7, 1989 due to disintegration of a recirculation pump bearing and subsequent debris penetration into the reactor vessel. Disintegration resulted from insufficient welding, officials reported.

A small number of antinuclear activists are staying in the two towns, campaigning against the

complex and the restart with vans equipped with bull horns, local sources said. "Some town folks are joining the caravan," a villager said.

The town assembly of Tomioka's 17,000 residents is moving to delegate full authority on the issue to its mayor, local sources said. Naraha's assembly, representing its 8,300 citizens, met on October 22 and did so, the town hall confirmed. The latest development symbolizes how concerned both the industry and local residents have become about the January 1989 incident in particular and overall safety of **nuclear** power plants in general, observers noted.

1 novembre 1990 : l'AEC plaide pour un développement du nucléaire

JAPAN ATOMIC ENERGY WHITE PAPER STRESSES NEED FOR MORE NUCLEAR --- Naoaki Usui, Tokyo

Nucleonics Week

NUC

Pg. 3

Vol. 31, No. 44

It is "imperatively necessary" for energy-vulnerable Japan to develop and utilize **nuclear** energy and to establish a more complete, domestic fuel cycle industry, Japan's Atomic Energy Commission (AEC) stresses in its recently released 1990 Atomic Energy White Paper. But public trust must also be earned back, it warned.

The White Paper is mainly an update of last year's edition, with a few new twists, including a brief reference to last June's decision by utilities to start preliminary conceptual design studies of a top-entry, loop-type demonstration model fast breeder reactor (FBR).

The 416-page report was approved by the cabinet October 26. A digested, English-language version is planned, but it was unclear at press time when it will become available, AEC officials said.

In general, the White Paper stressed that **nuclear** power is more important than ever for Japan, given global environmental issues, rising electricity demand, and the crisis in the Middle East.

The August invasion of Kuwait by Iraq and resulting oil price hikes once again made clear Japan's vulnerable energy supply situation, and, consequently, the importance of energy security and savings. Particularly important is the development of non-fossil energy sources including **nuclear**, which already accounts for 26% of the country's total electricity generation, the AEC report said.

The greenhouse effect, acid rain, and other global environmental problems, caused largely by carbon dioxide from fossil fuels, make it a major challenge to improve energy efficiency and switch over to non-fossil fuels, the paper added. **Nuclear** power should play an important role in that effort because it produces neither carbon nor nitrogen oxides, the report said.

Currently, Japan operates 39 commercial power reactors--21 BWRs, 17 PWRs and one gas-cooled reactor--whose capacity totals 31.48-million kilowatts.

The country's **nuclear** capacity is targeted to reach 50.5-million KW (13.2% of its primary energy need and 35% of total electricity generation) by the year 2000, and 72.5-million KW (16.9% and 43%, respectively) by 2010.

Reflecting nascent public concern about **nuclear** power, the 1990 White Paper conceded that the January 1989 "trouble" at **Fukushima** II-3 unit has damaged public trust of **nuclear** power in Japan. Tokyo Electric Power Co. shut down the unit on January 7, 1989 after finding fragments of a broken recirculation pump in the reactor vessel. It was the first incident of its kind in the Japanese **nuclear** power industry.

More diverse brackets of the public, including those who have not been interested in the issue until quite recently, have come to be concerned and fearful of **nuclear** energy, particularly since the Chernobyl accident, the White Paper admitted. The public's "understanding and cooperation" is more important than ever for smooth **nuclear** development and utilization, it said.

"It is not easy to eliminate doubts and concern about **nuclear** power generation, which already have been generated among the public," the White Paper said. "And, under current, severe circumstances, it is a mandatory precondition to secure safety....**Nuclear** officials must build up and accumulate safety records steadily with meticulous attention to the finest details."

In that context, the trouble at **Fukushima** II-3 "cast a shadow" over the local residents' and the public's trust of **nuclear** power, the White Paper admitted. Lessons Japan must learn from the trouble is never to overlook any minor disorder or trouble, to thoroughly analyze causes, and to release findings in a "proper way," the report added.

4 avril 1991 : poursuite judiciaire poru demander l'arrêt du réacteur n°3

SUIT SEEKS SHUTDOWN OF A NUCLEAR REACTOR BY P-I News Services

Seattle Post-Intelligencer

SEPI**ED** FINAL

a2

With Japan's **nuclear** power industry and protest movement both on the rise, five activists yesterday filed the nation's first lawsuit demanding the shutdown of an operating reactor.

The suit came less than two months after Japan's worst **nuclear** plant accident, which was followed by breakdowns and safety disclosures at five other plants.

Japan obtains 26.6 percent of its electricity from **nuclear** power, and the government expects the figure to reach about 35 percent by 1995.

The suit in Tokyo District Court demands that Tokyo Electric Power Co. close its No. 3 reactor at the **Fukushima Nuclear** Power Plant in northern Japan to protect the safety of area residents.

23 mai 1991 : 23 accidents déclarés dans les centrales japonaises en 1990

JAPANESE NUCLEAR PLANTS REPORT 23 EVENTS AND INCIDENTS IN FY-90 --- Naoaki Usui, Tokyo

Nucleonics Week

NUC

Pg. 15

Vol. 32, No. 21

Japan's 39 commercial **nuclear** power plants encountered a total of 23 incidents that required reporting to the government during fiscal year 1990, up one from the previous year and an average 0.6 case per unit, the Ministry of International Trade & Industry (MITI) reported.

The cases included four scrams, nine manual shutdowns, and 10 anomalies discovered while reactors were shut, MITI said. None of them brought about any radioactive releases to the surrounding environment, the ministry added. The fiscal year runs April 1, 1990 through March 31, 1991.

Generally believed to be the most serious event was the February 9 steam generator tube rupture at the 500-MW Mihama-2 PWR of Kansai Electric Power Co., which resulted in a scram and the first automatic actuation of the emergency core cooling system in Japan. MITI and **Nuclear** Safety Commission investigation teams are still checking why the rupture occurred.

Three other scram cases included:

--On September 9, Tokyo Electric Power Co.'s (Tepco) 784-MW **Fukushima** I-3 BWR scrammed, caused by a defective connecting pin in the main steam separation valve, which drove the valve to choke off a steam pipe.

--On December 4, Chugoku Electric Power Co.'s 820-MW Shimane-2 BWR scrammed, when the reactor mode switch was prematurely flipped from "start" to "operation." That triggered a warning signal that the main steam separation valve was closed, and the scram.

--On February 21, Tepco's 1,100-MW Kashiwazaki-Kariwa-2 BWR scrammed, caused by a signal that the main oil pump pressure went too low, which, in turn, was triggered by mishandling of an oil piping valve.

29 octobre 1991 : des blocs de construction française pour la digue de Fukushima

Tohoku Electric to Use French Accropode blocks.

Jiji Press English News Service

JIJI

Sendai, Oct. 29 (Jiji Press)--Tohoku Electric Power Co. said Tuesday it has decided to use blocks made by Sogreah Consulting Engineers of France for its harbor construction project now under way in **Fukushima** Prefecture.

This will the first project in Japan to use Accropode, a new type of breakwater blocks developed by the Grenoble-based company.

Accropode blocks, with six projections, are considered more economical than conventional blocks as they make highly stable barriers against waves by using about one-third less blocks than the total number usually required.

Tohoku Electric will be able to cut construction costs for the project in Haramachi, **Fukushima**, by some 23 pct, or 2.5 billion yen, by using Accropode blocks, company officials said.

The 13-billion-yen project is part of preparatory engineering for the construction of a **nuclear** power plant in the city, scheduled to go on line in 1997.

The electric power company serving the northeastern Japan region also said that it will sign a tie-up agreement with Preussen Elektra, the second largest power supplier in Germany, next spring.

Initially, the two power companies will exchange information on **nuclear**, thermal and wind power generation, Tohoku Electric officials said.

8 juillet 1992 : arrêt du réacteur 1 à la suite d'une hausse de pression

Incident at Fukushima nuclear reactor.

BBC Monitoring Service: Asia-Pacific

BBCFE**NGC** BBC**GC** CTGBBC

The No 1 **nuclear** reactor at **Fukushima** No 1 **Nuclear** Power Plant, which is operated by the Tokyo Electric Power Company, Ltd. [TEPC], automatically stopped on 29th June due to a sudden rise in pressure inside the reactor. The reactor was undergoing a regular inspection and the incident occurred while inspectors were resuming operation of the reactor. No radioactive leakage was detected around the reactor. According to a report sent to the Ministry of International Trade and Industry [MITI] from TEPC, the reactor automatically stopped as soon as a censor detected abnormally high pressure in the reactor. (NHK Television Tokyo in Japanese 0300 gmt 30 Jun.)

29 septembre 1992 : arrêt d'un réacteur à la suite d'une panne sur une pompe

Japanese nuclear reactor shut down for pump failure

Agence France-Presse

AFPR

TOKYO, Sept 29 (AFP) - A **nuclear** reactor was automatically shut down when its water pump stopped at a power plant north of Tokyo Tuesday, but there was no fear of radioactive leakage, officials said.

An emergency core cooling system was activated immediately after the pump failure and the level of cooling water in the reactor dropped to some two meters (seven feet) from five meters (17 feet) above the top of the fuel rods, the officials said.

The cooling system supplied fresh water to the core of the 784,000 kilowatt boiling water reactor and the water was refilled to the normal level in about two minutes, according to the officials at the Natural Resources and Energy Agency.

The accident took place at a coastal **nuclear** power plant of Tokyo Electric Power Co. in **Fukushima**, some 200 kilometers (125 miles) north of here.

It was the fifth time since 1979 that an emergency cooling system in a Japanese **nuclear** reactor was activated. In February 1991, a **nuclear** reactor leaked small amounts of radioactive material into the air and the sea when a valve broke at a plant in Mihama, western Japan.

30 septembre 1992 : arrêt du réacteur 2 à la suite d'une erreur humaine

Human Error Causes Emergency Nuclear Plant Shutdown BY MARI YAMAGUCHI

The Associated Press

ASP

TOKYO (AP) - A mistaken flip of a switch by a **nuclear** power plant worker caused a reactor's cooling pumps to fail, a government official said Wednesday, but an emergency system took over and prevented a **nuclear** meltdown.

The automatic activation of the emergency cooling system prevented radiation from being released by the plant in **Fukushima** prefecture, 70 miles northeast of Tokyo.

Local officials sharply criticized the Tokyo Electric Power Co., the plant's owner, for not notifying residents for hours about the emergency shutdown of the 18-year-old reactor.

"The case is very serious because it triggered (the emergency core cooling system)," said Jinzaburo Takagi, a physicist who heads the Citizens' **Nuclear** Information Center, an anti-**nuclear** group.

It was the first shutdown using the emergency system since Japan's worst **nuclear** accident, at Mihama in western Japan in February 1991, when a small amount of radioactivity was released into the atmosphere.

Tuesday's accident, at the number 2 reactor of **Fukushima Nuclear** Plant No. 1, involved a 784-megawatt lightwater reactor, the most widely used reactor design in the world. It uses ordinary water for cooling and to moderate the flow of neutrons that split the atoms that produce **nuclear** reactions.

The emergency system that went into effect at the plant is the last reliable defense against a core meltdown. The system pours cooling water onto a reactor's **nuclear** fuel rods to prevent them from reaching dangerously high temperatures.

A meltdown could occur if a reactor's rods heat to the point where their uranium fuel starts to melt and collects in a puddle on the reactor floor. A partial meltdown occured during the **nuclear** accident at Three Mile Island in Middletown, Pa., on March 28, 1979, the worst commercial accident in U.S. history.

The world's worst **nuclear** accident occurred on April 26, 1986, at the Chernobyl **nuclear** plant in Soviet Ukraine. It involved an explosion at a graphite-block moderated reactor.

Tuesday's accident was caused when a plant operator mistakenly flipped a switch. That informed the control computer that a backup water pump was operating when it actually was not, said Ryuko Fujii, chief of the Ministry of International Trade and Industry's **nuclear** safety division.

The computer then automatically shut off another pump, leaving only one primary pump supplying water to the reactor's cooling system.

The insufficient supply of water to cool the reactor caused another group of backup pumps to fail, Fujii said. He said plant operators corrected their mistake within a minute, but it was too late to keep the water level from dropping dramatically.

The cooling water initially fell three feet, triggering an emergency shutdown system, a Tokyo Electric official said. However, the water continued to fall and the emergency cooling system kicked in, pouring water into the reactor to cool the fuel rods.

In all, the water level fell to about 7.2 feet above the fuel rods, but they were never exposed during the incident, said the company official, speaking on condition of anonymity.

The fact that the fuel rods were not exposed meant that the water could continue to cool them and prevent them from reaching dangerously high temperatures.

"There was no fuel uncovered, which is major thing you worry about with those reactors," said Scott Peters, a spokesman for the U.S. Council for Energy Awareness, a Washington, D.C., group that promotes **nuclear** and coal energy. "There was no radiation release from the plant. ... The system worked as it was designed to work."

Takagi said the flood of water from the emergency cooling system could have damaged the fuel rods, because of the sudden drop in temperature. Fujii said such damage was unlikely, but a thorough inspection would be carried out.

Because the water fell so rapidly at the **Fukushima** plant, some Japanese **nuclear** specialists initially suspected a more serious problem. Many of Japan's commercial **nuclear** reactors are now about 20 years old, and critics have warned that they are becoming more dangerous. The **Fukushima** plant was completed in 1974.

Local officials demanded to know why it took the plant 2 1/2 hours to notify them that the emergency system had been triggered.

The Tokyo Electric spokesman said the company informed the prefecture shortly after the first three pumps shut down. But he said it didn't mention the emergency cooling system was activated until the company and government **nuclear** officials had finished an initial investigation.

The power company often tries to minimize the seriousness of problems at its plants.

In the accident in 1991, a reactor at the Mihama **Nuclear** Power Plant shut down automatically after a pipe in its steam generator burst, allowing small amounts of radioactive water to escape.

30 septembre 1992 : plaintes contre TEPCO en raison de mauvaises informations sur les accidents

Fury over shutdown of TEPCO nuclear plant.

Reuters News

LBA

TOKYO, Sept 30, Reuter -Japanese power company TEPCO's delay in alerting regional authorities to an emergency at one of the nation's oldest **nuclear** plants has sparked fury.

A Tokyo Electric Power Co (TEPCO) spokesman said Tuesday's accident which prompted the shutdown of its **Fukushima** Number One Plant in northern Japan caused no radioactive leak.

But **Fukushima** prefectural officials angrily complained that the company waited two hours to notify them of the emergency, although the shutdown itself was reported within 20 minutes.

"We asked them to improve reporting procedures after an accident three years ago at another reactor in the same plant," one official in the prefectural **nuclear** safety section said.

TEPCO said an emergency core cooling system (ECCS) shut down the 784,000-kilowatt reactor after the water level above the fuel rod dropped from a normal 5.3 metres to just 2.2 metres.

The TEPCO spokesman said one of the three pumps supplying water to the reactor core had failed. He said the firm was investigating the cause of the breakdown and reporting delay.

It was the second time that an ECCS had been activated in response to a reactor accident.

In February 1991 the Mihama plant in central Japan was halted after leakage from cracks in steam tubes caused water levels to fall.

Professor Tokunosuke Nakajima of Chuo University told Kyodo news agency that such accidents raised doubts over the credibility of safety measures at the nation's **nuclear** plants.

Officials from **Fukushima** prefectural headquarters and nearby towns were visiting the plant to investigate the incident.

Japan, which must import virtually all its energy, has 41 **nuclear** plants, generating 27 pct of its electricity supply.

Plans call for the number to almost double to 78 by 2010.

SE Asian-Pacific News

1 octobre 1992 : le Japon s'interroge sur la sécurité de ses centrales nucléaires

Nuclear Plant's Shutdown Raises Questions in Japan

Associated Press News Service

The Asian Wall Street Journal

AWSJ

PAGE 4

TOKYO -- Japanese government officials and **nuclear** experts raised questions on Wednesday about a rare shutdown of a **nuclear** power plant that triggered a last-line emergency cooling system to prevent a meltdown.

The incident on Tuesday was the first shutdown using the emergency core-cooling system since Japan's worst **nuclear** accident at Mihama in February 1991, when a small amount of radiation was released into the atmosphere. The emergency system is a last-ditch backup built into most power plants to avert core meltdown by pouring water on the **nuclear** fuel rods.

Tokyo Electric Power Co., the operator of the plant in **Fukushima** prefecture, about 114 kilometers northwest of Tokyo, said that no radiation had leaked from the reactor. The cause of the accident wasn't immediately known and is still under investigation, the company said.

A spokesman for Tokyo Electric said the No. 1 reactor of the **Fukushima Nuclear** Plant automatically shut down Tuesday afternoon following the failure of three pumps -- two that pressurize steam and another that pushes water into the reactor. The pump failures caused the level of the cooling water to fall, prompting the emergency system to automatically kick in to cover the fuel rods.

Ryuko Fujii, an official with the **nuclear** safety division of Japan's Ministry of International Trade and Industry, said simultaneous failure of three pumps is rare and "should not happen."

Because the water declined so rapidly to a dangerously low level, some **nuclear** specialists suspect a more serious problem was to blame. "The water should not keep falling like that," said Jinzaburo Takagi, a physicist who heads the Citizens' **Nuclear** Information Center, an anti-**nuclear** group.

Mr. Takagi said that the system's pouring large amounts of water over the exposed fuel rods could damage the rods because of the sudden drop in temperature. He added that the incident could be related to the age of the facility. Many of Japan's commercial **nuclear** reactors, including the one in **Fukushima**, are about 20 years old.

Local officials, who have begun a probe of the shutdown, said they are demanding to know why it took the plant more than two hours to notify them that the emergency system was used. "The basic rule is that we should be notified as soon as possible," said a **Fukushima** official, who spoke on condition of anonymity.

The Tokyo Electric spokesman said the company informed the prefecture shortly after the first three pumps shut down, but didn't mention the use of the emergency system until it traced the problem. The company acknowledged it didn't mention the use of the system in a statement on Tuesday until a reporter asked about it at a news conference.

In the 1991 accident, a reactor at the Mihama **nuclear** plant in Fukui prefecture shut down automatically after a pipe in its steam generator burst, sending radioactive water from the primary into the secondary cooling system. Officials said that some radiation had escaped in that accident, but that the level was below what is believed to be damaging to the environment.

29 octobre 1992 : deux groupes d'anti-nucléaires déboutés de leurs poursuites judiciaires

Nuclear opponents lose court battle

Agence France-Presse

AFPR

TOKYO, Oct 29 (AFP) - Two civic groups opposed to **nuclear** power plants lost supreme court battles here Thursday, dealing a blow to anti-**nuclear** activities.

The Supreme Court rejected appeals filed by the groups against government approvals of the construction of a **nuclear** power plant in Ehime Prefecture by Shikoku Electric Power Co. and another in **Fukushima** Prefecture by Tokyo Electric Power Co.

Upholding earlier verdicts by lower courts, the supreme court ruled that the government permits were lawful and official safety checks of the construction plans were appropriate.

Citing safety reasons, a group of 16 citizens filed a suit in 1973 against the plant in Ehime, western Japan, while another group of 17 people filed similar complaints in **Fukushima**, northern Japan, in 1975.

The pressurized water reactor in Ehime was put into operation in 1977, while the boiling water reactor in **Fukushima** started up in 1982.

Currently Japan has 42 **nuclear** reactors which generate 27 percent of its total electric power.

ss/mb AFP AFP SEQN-0266

31 octobre 1992 : un réacteur arrêté en raison d'une panne sur une pompe

Pump trouble stops Japanese nuclear reactor

Agence France-Presse

AFPR

TOKYO, Oct 31 (AFP) - A **nuclear** reactor at a power plant north of here was shut down Saturday due to a water pump failure but there was no danger of a radioactive leak, plant officials said.

The pump trouble led to a decrease in the level of cooling water, prompting the 1.1 million-kilowatt boiling water reactor to stop automatically and activate a reserve pump, the officials said.

Water subsidence was not rapid enough to set in motion the emergency core cooling system of the reactor designed to prevent a meltdown, they added.

The accident took place at a **nuclear** power plant of the Tokyo Electric Power Co. in Tomioka, **Fukushima** Prefecture, some 200 kilometers (124 miles) north of Tokyo.

It was the second similar reactor accident month to hit one of the company's **nuclear** power facilities recently. The emergency cooling system of a 784,000-kilowatt reactor at a nearby plant was activated September 29 when its pump stopped and the level of cooling water plunged rapidly.

5 novembre 1992 : la Cour suprême décide que les tribunaux ne peuvent pas juger les questions de sécurité nucléaire

JAPAN HIGH COURT: EXPERT ANALYSIS NOT SUBJECT TO JUDICIAL REVIEW --- Naoaki Usui, Tokyo

Nucleonics Week

NUC

Pg. 16

Vol. 33, No. 45

In a landmark decision, the Japanese Supreme Court ruled October 29 that the judiciary branch has no duty to scrutinize technical details of **nuclear** plant assessments made by expert bodies such as the Atomic Energy Commission (AEC), rejecting appeals by neighbors of two reactors to nullify licenses granted by the Ministry of International Trade & Industry (MITI). The decision effectively blocks laymen from challenging the official safety assessments on which **nuclear** plant licenses are based.

The high court said that decisions concerning the safety of a **nuclear** power plant are the prerogative of the Prime Minister, based on advice from the AEC and its experienced specialists. The Supreme Court thus upheld previous rulings that AEC's research and screening process had no obvious shortcomings. The courts' jurisdiction in **nuclear** licensing, it said, should be limited to verifying the correctness of the administrative part of the licensing procedure.

The government and utilities welcomed the decision; antinuclear activists expressed concern.

The court's decision was embodied in separate verdicts on two similar cases--one brought in 1972 by 16 residents near Shikoku Electric Power Co.'s Ikata-1, the other two years later by 17 neighbors of Tokyo Electric Power Co.'s **Fukushima** II-1. In both cases, plaintiffs asked for licenses to be nullified on grounds of insufficient safety assessment and screening.

The decision came only a month after the Supreme Court said **nuclear** plant neighbors had legal standing to sue over the safety of **nuclear** plant projects (NW, 1 Oct., 1).

10 novembre 1992 : arrêt du réacteur 1à la suite d'une panne sur le moteur d'une valve

Motor flaw shuts down Japanese nuclear plant again.

Reuters News

LBA

TOKYO, Nov 10, Reuter - A fault in a motor shut down a Japanese **nuclear** plant for the second time in six weeks but there was no radiation leak, a company spokesman said on Tuesday.

The 18-year-old **Fukushima** Number One Plant, one of Japan's oldest, was manually shut down on Monday after an alarm warned of trouble in the motor operating the valve of a steam pump that drives the turbine of the reactor's cooling system.

It was the second emergency in six weeks at the 784,000-kilowatt station on Japan's Pacific coast, operated by Tokyo Electric Power Company (TEPCO).

On September 29, an emergency core cooling system designed to prevent a meltdown shut off the reactor after the water level above the fuel rods dropped from a normal 5.3 metres (17 feet) to just 2.2 metres (seven feet).

TEPCO had just restarted the reactor after repairs when the latest incident occurred. Its cause is being investigated.

7 avril 1993 : TEPCO projette de construire deux nouveaux réacteurs

Utility to Add Two Nuclear Power Generators

Tokyo Financial Wire

CLNF

The Tokyo Electric Power Co., Inc. {9501} (TEPCO) intends to build two additional **nuclear** power generators at its **nuclear** power generation plant in **Fukushima** Prefecture.

Reference: Nihon Keizai Shimbun, 04/07/93, p.11

10 mai 1993 : poursuites judiciaires après la mort d'un travailleur de la centrale

Compensation sought for nuclear worker's death

Japan Energy Scan Kyodo News International, Inc

JPES

SHIZUOKA, May 5 Kyodo

The bereaved parents of a **nuclear** power plant worker who died of leukemia say they will seek compensation from labor authorities Thursday, arguing that their son died after being exposed to radioactivity.

Masahide Shimahashi, 63, and his wife Michiko, 56, said Wednesday that they will ask the Labor Standards Inspection Office in Iwata, Shizuoka Prefecture, in central Japan to recognize the death of their son, Nobuyuki, as resulting from exposure to radioactivity at a Hamaoka atomic power station run by Chubu Electric Power Co.

Nobuyuki reportedly died of leukemia in October 1991 at age 29. He had been working at the power plant for nearly nine years.

The application by the Shimahashis comes two days after the Labor Ministry formally recognized the death of another former **nuclear** power plant worker in **Fukushima** Prefecture, northeast Japan, as stemming from exposure to radioactivity.

Nobuyuki was exposed annually to radioactivity of less than 50 millisieverts, the maximum amount permitted under the **Nuclear** Reactor Control Law, according to a notebook on exposure to radioactivity at the power station.

However, the total amount of radioactive exposure during his eight years and 10 months at the plant came to 50.63 millisieverts, well over the 44.16 millisieverts allowed for Nobuyuki, the notebook showed.

The Labor Ministry bases its judgment on the total amount of exposure to radioactivity in recognizing deaths as being caused by radioactive exposure and thereby enabling families and relatives of victims to get compensation.

A spokesman for Chubu Electric Power said, "We have observed the regulations set by the **Nuclear** Reactor Control Law. As to the application, we cannot make any comment because it is a matter the Labor Ministry will independently make a judgment about."

Last December, the families of two men applied at the West Labor Standards Inspection Office in Kobe, Hyogo Prefecture, for formal recognition that they got leukemia from working in **nuclear** power plants.

One died of the disease last August after working at power stations of Kansai Electric Power Co. at Oi and Takahama, Fukui Prefecture, and at one of Kyushu Electric Power Co. at Genkai, Saga

Prefecture, between June 1978 and May 1989.

His colleague who also worked at the three **nuclear** power plants from 1987 through 1992 contracted leukemia.

According to civic groups supporting **nuclear** power plant workers, there are two other similar cases in Japan, in which compensation is being sought.

Another person living in Shizuoka Prefecture also is preparing to apply for compensation on similar grounds.

20 juin 1994 : l'ANRE demande une enquête sur l'accident de mai

Agency orders check on Fukushima reactor accident

Japan Energy Scan Kyodo News International, Inc

JPES

TOKYO, June 17 Kyodo

The Agency of Natural Resources and Energy has instructed Tokyo Electric Power Co. to thoroughly investigate last month's accident at one of the company's **nuclear** reactors in **Fukushima** Prefecture, agency officials said Friday.

The agency, part of the Ministry of International Trade and Industry, suspects the metal fittings holding down jet pumps in Japan's boiling-water reactors may be defective after it learned that the fittings had been replaced in the early 1980s to prevent just such an accident.

Operations at the **Fukushima** No. 2 power plant's 1,100-megawatt third reactor were closed down on May 30 when part of a metal fitting on one of the 20 jet pumps that regulate power output fell off.

Concern about the fittings 14 years ago, following a similar accident at a U.S. **nuclear** power facility, led Tokyo Electric Power to change the fittings on all its boiling-water reactors as a preventive measure.

According to the agency, the accident at an Illinois **nuclear** power plant in February 1980 was attributed to stress and corrosion around the holes for bolts that hold the jet pumps in place.

The power company replaced all the fittings in its reactors with a new type that was supposedly more resistant to stress and corrosion. The exchange operation was completed in 1984.

Since then, there have been no reports of any accidents related to the fittings, but the effects of stress and corrosion have been found at the **Fukushima** No. 1 power plant's first reactor and at the Hamaoka power plant's first reactor in Shizuoka Prefecture.

The **Fukushima** reactor, currently under investigation, was under construction at the time of the exchange operations and was installed with the newer-style fittings.

The same **Fukushima** reactor experienced trouble with its circulating-water pump in January 1989 and at that time, the jet pumps were removed from the reactor.

The agency suggested that the trouble with the metal fittings on the jet pumps may be related to the 1989 incident, but added that if trouble exists with the newer-style fittings, it may have to order the fittings on the boiling-water reactors be changed again.

The majority of Japan's **nuclear** power reactors are of the boiling-water type. An exception is the "Monju" reactor in Tsuruga, Fukui Prefecture along the coast of the Sea of Japan. It is a plutonium-fueled fast breeder reactor, which has become the cornerstone of Japan's energy policies for the future.

1 août 1994 : reconnaissance d'irradiation pour deux travailleurs de la centrale

Two win recognition over power plant radiation illness

Japan Energy Scan Kyodo News International, Inc

JPES

TOKYO, July 27 Kyodo

Two Labor Standards Inspection offices have acknowledged the claims of a worker and the family of a deceased worker that they suffered from work -related radiation illnesses contracted at **nuclear** power plants, informed sources said Wednesday.

The claims follow a previous successful claim by a former worker at the Tokyo Electric Power Co. **nuclear** plant in **Fukushima** Prefecture.

The two recent claims were submitted by a 38-year-old man from Hyogo Prefecture, whose name has been withheld, and on behalf of another man, Nobuyuki Shimahashi, now deceased, who worked at the Chubu Electric Power Co. **nuclear** power plant in Hamaoka, Shizuoka Prefecture.

The 38-year-old man was responsible for regular maintenance on equipment at three **nuclear** power stations in Saga and Fukui prefectures. He submitted a claim to the Kobe Nishi office, in Hyogo Prefecture, in December 1992.

The office said that because the man's health is still good it cannot disclose details of the amount of radiation he received.

Shimahashi was responsible for replacing measuring instruments at **nuclear** power stations for more than nine years from 1981. He was diagnosed as having chronic myeloid leukemia, a bone marrow disease.

After his death, his parents filed the claim with the Iwata office in Shizuoka Prefecture.

Shimahashi was subjected to radiation amounting to 50.63 millisieverts. One sievert is the equivalent of radiation received over one hour at a distance of 1 centimeter from a platinum vessel half a millimeter thick containing a radiation source equivalent to 1 milligram of radium.

The bureau ruled that he met the requirements for recognition of a claim because the dosage exceeded the accepted standard and he contracted the disease more than a year after he was first subjected to radiation.

22 août 1994 : TEPCO espère pouvoir construire deux nouveaux réacteurs

TEPCO to add reactors at Japan plant.

Reuters News

LBA

TOKYO, Aug 22 (Reuter) - Tokyo Electric Power Co Inc (TEPCO) said it would add two light water reactors at its **Fukushima** Number One **nuclear** power plant in northern Japan.

A spokesman said TEPCO hopes construction of the two advanced boiling water reactors (ABWR), each with a capacity of 1.36 million kilowatts, will start in 1996 or 1997, following environmental assessment beginning next April. Commercial operation may likely start early in the next century.

The **Fukushima** 1 plant, which already has six reactors, will have an output capacity of 7.41 million kilowatts with the addition of the two ABWRs.

The spokesman did not elaborate on construction costs but said **nuclear** reactors have cost about 300 billion to 400 billion yen each in the past.

Japan currently has 47 **nuclear** reactors, generating about 222 billion kilowatt-hours annually, or about a third of the nation's total electricity consumption.

The spokesman said TEPCO would also add two coal-fired generators at the nearby Hirono power station, in **Fukushima** prefecture. The two 600,000-kilowatt units, burning a mixture of coal and water, were estimated to cost 320 billion yen altogether and were to go on stream around 2005.

While acquiring suitable sites for **nuclear** plants in Japan is difficult amid opposition by environmentalists, TEPCO already had plenty of land around its existing **Fukushima** 1 facilities and local governments in the area were cooperative, the spokesman said.

After the new installations, **Fukushima** prefecture, which also has the 4.4 million-kilowatt **Fukushima** Number Two plant, will have the largest **nuclear** power capacity in Japan.

The spokesman said TEPCO has offered to construct a giant national soccer training centre in the area to help promote the local economy.

Kyodo news agency quoted Hideaki Kumano, vice minister of the Ministry of International Trade and Industry (MITI), as telling reporters the government supported construction of new **nuclear** plants.

"The ministry's policy on **nuclear** power plants remains unchanged," Kumano said. "**Nuclear** power generation will continue to be an important energy source in Japan."

Prime Minister Tomiichi Murayama's Socialist Party had traditionally opposed the use of **nuclear** power but said last month it supported the use of existing plants.

14 septembre 1995 : un tremblement de terre accélère la réaction nucléaire sur trois réacteurs

Quake accelerated nuclear reaction at 3 more reactors

Japan Economic Newswire

KYODO

TOKYO, Sept. 14 --

Three boiling-water reactors (BWRs) temporarily halted operation after **nuclear** reaction was accelerated by the shaking motion of an earthquake in 1987, the second finding of such an incident in Japan following one in 1993 at another BWR, Tokyo Electric Power Co. said Thursday.

In November 1993, the 524,000-kilowatt reactor at the Onagawa **nuclear** power plant of Tohoku Electric Power Co. in Miyagi Prefecture, northern Japan, stopped automatically after a quake accelerated its **nuclear** reaction by shaking the fuel assembly.

The Tokyo electric power company said a similar phenomenon happened in April 1987 to the three BWRs, which generate a total of 2 million kw of electricity, at the **Fukushima** No. 1 **nuclear** power plant in **Fukushima** Prefecture, near Miyagi Prefecture.

The earthquake registered an intensity of 5 on the Japanese scale of 7 in Shirakawa, **Fukushima** Prefecture.

The government, however, does not think it necessary to review the current safety measures on **nuclear** reactors because both of the facilities stopped automatically and are safe, said the International Trade and Industry Ministry and the Natural Resources and Energy Agency.

Following the 1993 incident, Tokyo, Tohoku and three other electric power companies that have BWRs began researching with manufacturers how earthquake affect such a type of reactor.

According to the research, neutrons apparently increased rapidly after the quakes jolted the fuel assemblies. Such an increase was not anticipated in the designing stage, officials said.

There are a total of 10 such reactors in Japan.

27 novembre 1995 : arrêt du réacteur 6 en raison de pressions anormales

TEPCO shuts nuclear reactor at Fukushima plant.

Reuters News

LBA

TOKYO, Nov 27 (Reuter) - Tokyo Electric Power Co Inc (TEPCO) has shut its 1.1 million-kilowatt **Fukushima** Number Six reactor in northwestern Japan to inspect a drainage system, the company said.

TEPCO said the water level in the reactor's pressure vessel rose to abnormal levels and was shut down manually.

The company did not know at this stage when the inspection will be completed, a company spokesman said.

1 mai 1996 : une "pléthore d'accidents" à Fukushima

Meltdown. (declining use of nuclear power) BY Nicholas Lenssen; Christopher Flavin

World Watch

WRWA

p22

ISSN: 0896-0615; Volume v9; Issue n3

The worst industrial accident ever to befall humanity left a wound that has not healed with time. Now, the **nuclear** power industry appears to be wearing out its welcome on the planet - and opening the door wider to renewables.

[…]

Even the advanced **nuclear** program of Japan has yielded a plethora of accidents. In February 1991, at the Mihama 2 pressurized water reactor, a steam generator tube ruptured, forcing the first use of an emergency cooling system in Japan. Public confidence was weakened by inconsistent statements from utility and government officials, and two days passed before the government admitted that radiation had escaped from the site. Eight months later, at a **Fukushima** plant, an emergency cooling system was once again forced into operation following an operator's error. Tokyo Electric Power Company officials did not admit that the emergency system had been activated until challenged by journalists.

[…]

30 septembre 1996 : construction du réacteur n°8

Japanese nuclear plant under construction

International Coal Report

ICLR

ISSN: 0260-4299

Utility Plant Capacity Operational target
Tohoku Onagawa III 825MW March 2002

Tokyo Kashiwazaki VI 1,356MW December 1996
Tokyo Kashiwazaki VII 1,356MW July 1997
Kyushu Genki IV 1,180MW July 1997
EPDC Ohma 606MW March 2002
Tohoku Maki 825MW December 2005
Tokyo **Fukushima** VIII 1,356MW 2005
Chubu Hamaoka V 1,358MW 2005
Source: Japanese Institute of Energy Economics
[...]

24 octobre 1996 : TEPCO achète des machines anglaises pour réparer ses enceintes de confinement

NUCLEAR LIFELINE FOR JAPAN.

The Engineer

ENGN

1

Derby milling machines to play a vital role in repairing damage to Toshiba's **Fukushima** reactor shields

Japan's Toshiba corporation has turned to Britain to buy machinery vital to repair serious defects on three of its **nuclear** reactors.

Toshiba has awarded Fermanite Silk Engineering a contract to provide a remotely controlled milling machine essential to replace damaged shields inside the reactor pressure vessels. The contract is worth at least #2m to the Derby firm.

Toshiba is being secretive about the project. It has provided Fermanite with very simplified

drawings and a specification that it says must fit three different `geometries'.

The specs include working in a lethally radioactive environment of 1,000 rads an hour.

`We know nothing about the plants they're planning to modify,' said John Goodman, Fermanite's project manager, who said that the machine was due for delivery in the first quarter of next year.

Dr Jinzaburo Tagaki, the executive director of the Citizen's **Nuclear** Information Centre in Tokyo and a former **nuclear** chemist for Toshiba, said the units were almost certain to be boiling water reactors at the **Fukushima** site which began operating in the 1970s.

Tagaki said cracking on the thermal shields, or shrouds, was the greatest problem on these BWRs and that the company had had to effect a temporary repair on one reactor, **Fukushima** 1-2, two years ago.

He said Toshiba was now probably having to cut out badly cracked sections of shield. The milling machine would be used to grind the cut to enable a new section to be welded into place.

With the shutdowns for repairs likely to take the best part of a year, the problem is potentially serious for Toshiba.

`Here you have a substantive failure half-way through the reactor life,' said John Large, a leading UK **nuclear** consultant. `Now you have extremely difficult repair operations going on in an intensely hostile environment. It certainly can't be dismissed as a glitch.'

By Andrew Cavenagh.

27 novembre 1996 : retard dans le redémarrage de réacteurs à la suite de la découverte de fissures

TEPCO may delay nuclear reactor start-up.

Reuters News

LBA

TOKYO, Nov 27 (Reuter) - Tokyo Electric Power Co Inc (TEPCO) said on Wednesday that it may delay re-starting a **nuclear** reactor in northern Japan due to ruptures in pipes which were discovered during maintenance checks.

Cracks were discovered in two of the 10 pipes which are connected to a pump which circulates coolant water around the heart of the 460,000-kilowatt reactor in **Fukushima**, TEPCO said.

There is no danger of radiation leaking as a result of the problems, said TEPCO, which is Japan's biggest power utility.

The reactor has been shut since August for maintenance checks and was originally scheduled to resume operations in late January.

However, the start-up may be delayed because of time needed to investigate the cause of the ruptures and replace the damaged pipes, TEPCO said.

The unit, which was put on line in 1971, is the fourth oldest of Japan's 50 commercial reactors

currently in service.

Japan relies on **nuclear** power for about 33 percent of its electricity needs.

12 décembre 1996 TEPCO demande l'autorisation de construire deux nouveaux réacteurs

Japan TEPCO To Seek Approval For 2 Nuclear Reactors In 1997

Dow Jones Telerate Energy Service

NRG

TOKYO (Dow Jones)--Japan's largest power utility, Tokyo Electric Power Co. (TEPCO), plans to file an official request with the government in July 1997 for permission to build two new **nuclear** power reactors in **Fukushima** Prefecture, a TEPCO official said Thursday.

As TEPCO is nearly finished compiling environmental impact studies of the reactors, it plans to submit a formal request to **Fukushima**'s local government authorities for permission early next year, he added.

The company is projected to construct two Advanced Boiling Water Reactors (ABWR) with power generating capacity of 1.38 million kilowatts each in the town of Futabacho, targeting to start operation in 2004 and 2005, the TEPCO official said.

TEPCO has already been operating 10 **nuclear** reactors at its two power stations in **Fukushima**. As economic compensation, the company has donated the town of Futabacho a football training center which is currently under construction, the official added.

Amid growing public mistrust of the country's **nuclear** program after a sodium leak accident at the fast-breeder reactor 'Monju' in December 1995, industry sources said it's getting harder for Japanese power utilities to find sites for new **nuclear** plants.
-Mika Watanabe 813 3505-5901

20 décembre 1996 : des actionnaires de TEPCO déboutés d'une demande d'arrêt de la centrale

SHAREHOLDERS LOSE SUIT FOR NUKE PLANT HALT.

Jiji Press English News Service

JIJI

Tokyo, Dec. 19 (Jiji Press)-Tokyo District Court Thursday turned down a request from shareholders of Tokyo Electric Power Co. to suspend the firm's operations of a **nuclear** power generator in **Fukushima**, northern Japan.

The suspension was demanded by five shareholders of the power utility firm, including a writer and a citizens' group member, who are protesting the operation of the **nuclear** reactor after the breakage of a pump for circulation of coolant in January 1989.

They accused Tokyo Electric Power Chairman Sho Nasu and other board members of negligence in ensuring safety of the power plant. The lawsuit was unprecedented in that shareholders sought suspension of **nuclear** reactor operations.

Presiding Judge Seishi Kanetsuki said evaluations of safety and other issues on **nuclear** reactors are highly technical and thus should be made by experts inside and outside of the power utility firm.

It was appropriate for Tokyo Electric Power to rely on the report by a special investigation team of the Agency of Natural Resources and Energy which found no problem in restarting the power generator, Kanetsuki said.

17 janvier 1997 : petit incendie au réacteur n°2

Japan utility puts out minor fire at nuclear plant.

Reuters News

LBA

TOKYO, Jan 17 (Reuter) - Tokyo Electric Power Co Inc (TEPCO), Japan's largest power utility, said on Friday it had extinguished a small fire which broke out in the building housing a **nuclear** reactor in **Fukushima**, northern Japan.

The fire, which broke out at about 1423 JST, was put out in seven minutes. The incident has not affected operation of TEPCO's **Fukushima** No.2 reactor, with a capacity of 1.1 million kilowatts, nor contaminated the surrounding environment, TEPCO said. No one was injured.

21 janvier 1997 : délai dans le redémarrage d'un réacteur après la découverte de fuites

TEPCO to delay start-up of nuclear reactor.

Reuters News

LBA

TOKYO, Jan 21 (Reuter) - Tokyo Electric Power Co Inc (TEPCO) said on Tuesday it would delay restarting a **nuclear** reactor in northern Japan, originally due to take place in late January, because of the need to do more repair work.

TEPCO found ruptures in two of 10 pipes connected to a pump circulating coolant water around the 460,000-kilowatt reactor at its **Fukushima** plant last November during routine maintenance checks that started in August.

The electricity utility last week started repair work on the cracks, which are expected to take about one month, a company spokesman said.

The exact starting date is unclear as some fine-tuning will be necessary at the facility following the repair before the reactor goes back on line, he said.

The unit, which started commercial operations in 1971, is the oldest of TEPCO's 16 reactors, he added.

The ruptures pose no danger of radiation leakage, TEPCO said last year after the problem came to light.

29 avril 1997 : arrêt du réacteur n°2 à la suite d'une fuite de gaz radioactif

Japan nuclear reactor shut down after gas leak.

Reuters News

LBA

TOKYO, April 29 (Reuter) - Tokyo Electric Power Co (TEPCO) halted operations at a **nuclear** reactor on Tuesday after a rise in radioactivity in exhaust gas at the plant, a company spokesman said.

The spokesman said there was no evacuation of the plant or of residents around it at **Fukushima**, about 200 km (125 miles) north of Tokyo.

But the shutdown was a new blow to Japan's **nuclear** power programme which was hit last month by the country's worst **nuclear** accident when fire broke out at a **nuclear** fuel processing plant.

"There is no evacuation of workers from the plant or any alerts declared by the regional authorities," a TEPCO spokesman told Reuters. "The incident was never a serious threat but we took early precautions by shutting the plant down."

He said the alarm on a monitor checking the level of radioactivity of exhaust gas at **Fukushima** No. 2 **Nuclear** Power Plant's No. 2 reactor sounded at 6.55 p.m. (0955 GMT) on Monday.

In response, the company manually lowered generating power and then shut down the 1.1 million kilowatt reactor completely about 12 hours later, he said.

The spokesman said a gauge that measured gas produced when steam condensed in the reactor indicated the level of radioactivity was 20 times higher than normal after the alarm sounded.

But checks on Tuesday showed there was no radioactivity leakage anywhere in the plant, the spokesman added.

He said the brief rise in radiation was caused by a pinhole leak in part of a cover over a **nuclear** fuel rod in the reactor.

The plant would be shut for about three weeks while the cover was repaired and other checks were carried out, he said.

Japanese nuclear reactor leaks traces of radioactivity

29 avril 1997

Associated Press Newswires

APRS

TOKYO (AP) - A **nuclear** power plant in northeastern Japan has leaked small amounts of radioactivity, prompting the plant's operator to shut down the reactor, a company spokesman said Tuesday.

The privately-owned Tokyo Electric Power Co. turned off its boiling water reactor late Monday after an exhaust monitor registered 20 times the normal level of radioactivity.

Alarms on the monitor went off shortly before 7 p.m. Monday. The plant made the decision to shut down at 11:20 p.m. when radioactivity levels began to rise again after an initial fall.

The cause of the leak is still being investigated, said a spokesman at Tokyo Electric, which runs the plant in **Fukushima** Prefecture, 239 kilometers (149 miles) northeast of Tokyo.

The spokesman, Takeshi Takamori, said the lead posed no danger to the environment. Takamori did not specify exactly how much radioactivity was released, but he said it was insignificant.

Japan's **nuclear** power industry has suffered a series of accidents in recent years.

A **nuclear** reprocessing center north of Tokyo suffered a fire and explosion on March 11, and radioactivity was released. The plant operator, the government-linked Power Reactor and **Nuclear** Fuel Development Corp., or Donen, has been accused of mishandling the accident and covering up mistakes.

For example, police suspect Donen of hiding photographs of the accident site, news reports said Tuesday.

Donen official have acknowledged the plant repeatedly filed false reports to the government, saying that an employee had made sure the fire had been extinguished, when in fact no such confirmation had taken place.

30 avril 1997 : le réacteur n°2 restera arrêté jusqu'à une date non précisée

TEPCO reactor start-up date yet to be set.

Reuters News

LBA

TOKYO, April 30 (Reuter) - Tokyo Electric Power Co Inc (TEPCO) said on Wednesday the start-up date of a **nuclear** reactor that was closed on Tuesday remained unclear.

The 1.1 million kilowatt (kw) reactor at the **Fukushima** No.2 **Nuclear** Power Plant, about 100 km northwest of Tokyo, was shut early Tuesday morning after the radioactivity level in exhaust gas rose 20 times above normal levels late Monday night.

Coolant water was also contaminated with radiation, a TEPCO spokesman said. But he said no radiation had leaked into the environment.

"It is too early to say when the reactor can resume operations, as we don't know for sure the cause (of the surge in the radioactivity level)," the spokesman said.

But he said a pinhole in the metal cover of a **nuclear** fuel rod in the reactor could have caused the leakage.

It usually takes about two to three weeks to repair a pinhole in metal tubes and then restart the reactor.

TEPCO plans to compensate for the lost electricity production by boosting operating rates of other **nuclear** reactors, the spokesman said.

On the International **Nuclear** Event Scale (INES) of zero to seven, the leak was provisionally evaluated zero by the government's Agency of Natural Resources and Energy, indicating the incident did not threaten safety.

An accident last month at a **nuclear** fuel reprocessing plant in Tokaimura, 120 km northeast of Tokyo, was evaluated three on the scale. A fire and explosion at the reprocessing plant exposed 37 workers to low-level radiation.

INES was jointly developed by the International Atomic Energy Agency and the Organisation for Economic Cooperation and Development's **Nuclear** Energy Agency to evaluate the significance of incidents at **nuclear** plants.

TEPCO, Japan's largest electric power utility currently operates 16 **nuclear** reactors including the unit closed on Tuesday, whose power generation capacity totals about 16 million kw.

--Tokyo Energy Desk +81-3-3432-8837

7 mai 1997 : arrêt du réacteur n°1 en raison d'une baisse du liquide réfrigérant

TEPCO says reactor shut due to lack of coolant.

Reuters News

LBA

TOKYO, May 7 (Reuter) - Tokyo Electric Power Co Inc (TEPCO) said on Wednesday its 784,000 kilowatt reactor in eastern Japan was automatically shut on Tuesday evening due to a lack of coolant supply to the reactor.

TEPCO had been gradually lowering operating rates of the reactor at the **Fukushima** No 1 **nuclear** power plant, 228 km (143 miles) northeast of Tokyo, at the time of the automatic shutdown.

The operating rates were being lowered in preparation for a 10-day maintenance closure scheduled to start at midnight on Tuesday.

The boiling water reactor is programmed to halt its operations if the water level in the reactor pressure vessel, which needs to be kept at a depth of 14 metres, goes below 13 metres, a TEPCO spokesman said.

The cause of the shortage in coolant water supply is under investigation, and it is unclear if the reactor will be closed longer than 10 days due to the malfunction, he said.

The shutdown has caused no radiation leakage, he added.

--Tokyo Energy Desk +81-3-3432-8837

20 mai 1997 : redémarrage envisagé du réacteur n°2

TEPCO plans to restart reactor May 29.

Reuters News

LBA

TOKYO, May 20 (Reuter) - Tokyo Electric Power Co Inc (TEPCO) plans to resume operation of its 1.1 million-kilowatt (kw) **nuclear** reactor in **Fukushima** prefecture in northern Japan around May 29, a company spokesman said on Tuesday.

TEPCO halted operation of the **nuclear** reactor in the **Fukushima** No 2 power plant on April 29 after the level of radioactivity in the reactor's exhaust gas rose.

The accident was caused by a leak in one of the reactor's fuel rods. The fuel rod has been replaced, the company said.

"As things now stand, we plan to restart the reactor around May 29," the spokesman said.

There was no report of a radiation leak due to the accident.

--Tokyo Energy Desk +81-3-5473-3706

9 juin 1997 : fuite radioactive sur le réacteur n°1

Radioactive water leaks from Japanese nuclear plant

Associated Press Newswires

APRS

TOKYO (AP) - A small amount of radioactive water leaked from a **nuclear** power plant in northeastern Japan, but it posed no threat to people or the environment, a company spokesman said Monday.

The leak from a valve of the reactor's coolant water-supply pump occurred Sunday at the Tokyo Electric Power's No. 1 **Fukushima nuclear** power plant at Okuma, and is being investigated, the company said. Okuma, a Pacific coastal town, is 225 kilometers (140 miles), northeast of Tokyo.

An estimated 100 liters (26 gallons) of coolant leaked, said Tokyo Electric Power spokesman Hiroaki Ishibashi. He said levels of the radioactivity were no higher than usual.

A plant operator found the leak while patrolling the affected reactor, which was running at a full capacity of 784,000 kilowatts, Ishibashi said. The reactor was under a regular inspection that began Feb. 18 and was to end early next month.

Following Sunday's accident, the reactor's output was reduced to 550,000 kilowatts, he said.

Japan's **nuclear** energy industry has been rocked recently by accidents and a cover-up scandal that reduced its credibility.

On March 11, a fire and explosion at a **nuclear** fuel reprocessing plant exposed 37 workers to low-level radiation. That plant's operator, the state-run Power Reactor and **Nuclear** Fuel Development Corp., or Donne, submitted a false report on the accident to the government, officials said.

Japan has 51 **nuclear** power plants, which supply 35 percent of the nation's electricity. Tokyo Electric operates 16 **nuclear** power plants, including the **Fukushima** one.

(km/twx)

12 juin 1997 : forte augmentation des accidents dans les centrales japonaises

Japan nuclear industry reporting more incidents.` BY By Peter Lardner

Reuters News

LBA

TOKYO, June 12 (Reuter) - The reporting of accidents within Japan's troubled **nuclear** energy industry has improved dramatically, government officials said on Thursday, but some say the change may raise more questions than it answers.

Japan's **nuclear** energy reputation has come under criticism at home and abroad over the past six months because of a litany of accidents and botched cover-ups.

"The utilities have been very good lately in reporting incidents whether it be a minor matter like somebody tripping and hurting themselves," a spokesman quoted Japan's Science & Technology Agency Chief, Riichiro Chikaoka, as saying.

Indeed, plant officials seem to have taken to heart the need for more open reporting, with three minor incidents logged in the past ten days alone, and an average of more than one incident per week over the last six weeks.

An official from Japan's Citizen's **Nuclear** Information Center welcomed the new wave of reporting, but saw it as worrisome as well.

"It's good to see there has been an increased volume in accident reports, but a little concerning when you consider that this many accidents likely have been happening all along," the official said.

"The concern is that the volume of reporting on minor incidents will give people a false sense of security that big accidents will be reported accurately," he added.

Among mishaps reported over the last six weeks have been a partial plant closure due to a massive school of jellyfish blocking a coolant water intake pump, a small fire in a toilet in a building that houses a reactor, and a stoppage due to unexpected clanging sounds coming from within a plant's system.

Two other reports, however, involved radioactive leakage-- one at a Shikoku Electric Power Co Inc facility in western Japan, another at a Tokyo Electric Power Co Inc (TEPCO) facility in **Fukushima**.

A third, also at TEPCO's **Fukushima** plant but in a different reactor, involved a stoppage due to radioactivity in exhaust gas being 20 times higher than normal.

In May, an International Atomic Energy Association (IAEA) spokesman said that the global **nuclear** watch-dog was closely monitoring the "turmoil" in Japan, adding that the "Japanese approach to crisis management (was) clearly different to those seen in the United States and Europe."

The comments came in response to a March fire and explosion at a Tokaimura processing plant 120 km (75 miles) north of Tokyo which exposed 37 workers to low-level radiation.

After the accident it was discovered that the chief investigator of Japan's top **nuclear** agency deliberately destroyed photographs of the fire in a failed cover-up.

"It's hard to judge this new wave of reports, because there's nothing to compare it to," said the Citizen's **Nuclear** Information Center official.

"Before," he said, "there was just very little reporting."

"Unfortunately, we'll have to wait for the next big mishap to really tell if companies have really come clean."

14 octobre 1997 : fissure découverte sur une canalisation

TEPCO finds cracked reactor pipe, no radiation leak.

Reuters News

LBA

TOKYO, Oct 14 (Reuters) - Tokyo Electric Power Co Inc (TEPCO) said on Tuesday it had found a crack in a pipe housing a neutron measuring device at a **nuclear** reactor in **Fukushima** Prefecture northeast of Tokyo during regular maintenance checks.

"We found a crack about three centimetres long inside the pipe in the course of routine maintenance," a TEPCO spokesman said. The crack caused no radiation leakage, he added.

It was unclear whether the 784,000-kilowatt unit, one of six reactors at TEPCO's **Fukushima** No 1 **nuclear** power plant, would remain closed longer than originally planned due to the crack, he said.

The reactor has been shut since mid-September for maintenance checks, and was initially scheduled to resume operations next January 11.

- Tokyo energy desk (813) 3432-3708

email : tokyo.energy.newsroom@reuters.com

5 décembre 1997 : arrêt d'un réacteur à la suite d'une panne

TEPCO to shut 1.1 mln kw reactor after malfunction.

Reuters News

LBA

TOKYO, Dec 5 (Reuters) - Tokyo Electric Power Co Inc (TEPCO) said it would shut down a 1.1 million kilowatt (kw) reactor on the Pacific coast by 11 p.m. (1400 GMT) on Friday after a malfunction at the unit.

There was no radiation leakage, a TEPCO spokesman said.

It is not clear at the moment how long the reactor will remain closed, the spokesman said, adding that the cause of the malfunction was not yet known.

"One of the control rods got stuck when we were rearranging them this morning," he said.

Control rods are rotated periodically to maintain maximum power generation efficiency at **nuclear** reactors.

The unit is one of four reactors at TEPCO's **Fukushima** No.2 **nuclear** power plant, located 210 km northeast of Tokyo. ((Tokyo Energy Desk +81-3 3432-3708 tokyo.energy.newsroom@reuters.com))

20 janvier 1998 : TEPCO envisage de remplacer 144 barres de contrôle en raison de malfaçons

Tokyo Elec. Power, Japan Atomic Power to Replace Control Rods.

Jiji Press English News Service

JIJI

(c) 1998

Tokyo, Jan. 20 (Jiji Press)-Japan Atomic Power Co. and Tokyo Electric Power Co. separately said Tuesday they will replace 144 control rods at boiling-water **nuclear** reactors because of manufacturing flaws.

The rods, made by ABB Atom AB of Sweden, failed to work properly last October at the No. 1 reactor of Japan Atomic Power's **nuclear** power plant in Tsuruga, Fukui Prefecture, and in December at the No. 1 reactor of Tokyo Electric Power's second **Fukushima** plant in **Fukushima** Prefecture, the companies said.

Rods will be replaced at a total of 11 boiling-water reactors, they said.

24 janvier 1998 : les résidents vivant autour de la centrale s'inquiètent de l'utilisation du plutonium

Residents near reactors concerned about plutonium use

Japan Economic Newswire

KYODO

FUKUSHIMA, Japan, Jan. 24 --

Residents living in the vicinity of two **nuclear** power plants in **Fukushima** and Niigata prefectures have expressed concerns about the government's plan to begin burning plutonium there in 1999, government officials said Saturday.

The International Trade and Industry Ministry and some other authorities recently made public the results of a local symposium held to discuss the matter earlier this month, during which some 140 residents presented in written form their opinions about the use of plutonium.

Around a half of the 140 residents expressed concerns or questioned the safety of the so-called "pluthermal" program, in which plutonium is burned in thermal neutron reactors, they said.

The government plans to begin using plutonium next year -- the first time ever in Japan -- at Tokyo Electric Power Co.'s **Fukushima** No. 1 **nuclear** power plant in **Fukushima** Prefecture, north of Tokyo, and later at the same company's Kashiwazaki-Kariwa **nuclear** power plant in Niigata Prefecture on the Sea of Japan coast.

Koshiro Ishimaru, a 55-year-old post office worker in Tomioka, Niigata Prefecture, expressed concerns that the costs of the new method may burden the power company and may make it less aware of safety considerations.

A man in Kashiwazaki, Niigata Prefecture, said even the facilities' current operations make him worry about the possibility of accidents.

Another man in Kariwa, also in Niigata, said that some consumers have refrained from buying farm products from areas nearby the reactors and that the program may further motivate consumers to veer away from such products.

On the other hand, Fumiko Yokota, a 60-year-old housewife in Naraha in **Fukushima** Prefecture, expressed support for the project, saying **nuclear** power is a "realistic" option for electricity generation.

The program involves burning pellets of mixed oxide fuel (MOX), comprised of plutonium and uranium, inside **nuclear** reactors to generate heat, which in turn is tapped to generate electricity.

The state has approved a recommendation by the Atomic Energy Commission, the government's advisory panel on **nuclear** energy policy, to have more than 10 **nuclear** reactors generating electricity through the burning of MOX fuel by the year 2010.

Japan hopes to consume plutonium, recycled from spent **nuclear** fuel, at thermal neutron reactors, which include light-water reactors and other types of ordinary reactors.

In December, Japan announced that its stock of plutonium stood at about 54 tons as of December 1996, up from about 46 tons the previous year, with most of the increase being due to the plutonium contained in spent **nuclear** fuel.

30 juillet 1998 : arrêt du réacteur n°6 à la suite d'une fuite de vapeur

Tokyo Electric shuts down nuclear reactor after steam leak

Associated Press Newswires

APRS

TOKYO (AP) - Tokyo Electric Power Co. shut down one of its **nuclear** reactors in northern Japan Thursday due to a steam leak in turbine pipes, the company said.

The steam leak was discovered at 2:10 p.m. (0510 GMT) at the company's 1.09 million-kilowatt,

No. 6 **nuclear** reactor in **Fukushima**, 239 kilometers (149 miles) northeast of Tokyo. Reactor operation was stopped at around 5 p.m. (0800 GMT).

The cause of the leak will be investigated Friday, the company said. It added that there had been no danger of a radioactive leak.

18 août 1998 : TEPCO demande aux autorités locales l'autorisation d'utiliser du plutonium (MOX)

TEPCO asks local gov'ts to accept plutonium use

Japan Economic Newswire

KYODO

FUKUSHIMA, Japan, Aug. 18 --

Tokyo Electric Power Co. (TEPCO) asked authorities in **Fukushima** Prefecture on Tuesday to allow the use of fuel containing plutonium at its **nuclear** power plant in Okuma from the beginning of 1999, company officials said.

If the prefectural government and the Okuma and neighboring Futaba town governments give preliminary consent to the plan, the company will ask for the central government's permission to use mixed-oxide fuel at its **Fukushima** No. 1 **nuclear** power plant in Okuma.

Fukushima Gov. Eisaku Sato in late July had suggested his intention to accept the plan.

Mixed-oxide fuel -- the product of uranium mixed with plutonium extracted from spent **nuclear** fuel -- is not currently used at any of Japanese **nuclear** power plants.

Besides the **Fukushima** No. 1 **nuclear** power plant, the company plans to introduce the fuel at its Kashiwazaki-Kariwa **nuclear** power plant in Niigata Prefecture.

Kansai Electric Power Co. has already applied to the central government to use the fuel at the Takahama **nuclear** power plant in Fukui Prefecture, after local authorities gave the plan their preliminary approval in May.

Kansai Electric Power plans to introduce the fuel at the two reactors by 1999 and 2000, respectively.

The government gave a green light to the project in February 1997 as a stopgap measure to use Japan's plutonium supply. Its plan to establish a **nuclear** fuel cycle was stalled following a liquid sodium leakage accident in 1995 at the Monju prototype fast-breeder reactor in Fukui Prefecture.

Local governments asked to accept use of plutonium.

19 août 1998

BBC Monitoring Service: Asia-Pacific

BBCFE**NGC** BBC**GC** CTGBBC

Source: Kyodo News Service, Tokyo, in English 0254 gmt 18 Aug 98

Text of report by the Japanese news agency Kyodo

Fukushima, Japan, 18th August: Tokyo Electric Power Co (TEPCO) asked authorities in **Fukushima** Prefecture on Tuesday [18th August] to allow the use of fuel containing plutonium at its **nuclear** power plant in Okuma from the beginning of 1999, company officials said.

If the prefectural government and the Okuma and neighbouring Futaba town governments give preliminary consent to the plan, the company will ask for the central government's permission to use mixed-oxide fuel at its **Fukushima** No 1 **nuclear** power plant in Okuma. **Fukushima** Governor Eisaku Sato in late July had suggested his intention to accept the plan.

Mixed-oxide fuel - the product of uranium mixed with plutonium extracted from spent **nuclear** fuel - is not currently used at any of Japanese **nuclear** power plants. Besides the **Fukushima** No 1 **nuclear** power plant, the company plans to introduce the fuel at its Kashiwazaki-Kariwa **nuclear** power plant in Niigata Prefecture. Kansai Electric Power Co has already applied to the central government to use the fuel at the Takahama **nuclear** power plant in Fukui Prefecture, after local authorities gave the plan their preliminary approval in May. Kansai Electric Power plans to introduce the fuel at the two reactors by 1999 and 2000 respectively.

The government gave a green light to the project in February 1997 as a stopgap measure to use Japan's plutonium supply. Its plan to establish a **nuclear** fuel cycle was stalled following a liquid sodium leakage accident in 1995 at the Monju prototype fast-breeder reactor in Fukui Prefecture.

TEPCO seeks approval to use MOX nuclear fuel.

19 août 1998

Reuters News

LBA

TOKYO, Aug 19 (Reuters) - Tokyo Electric Power Co Inc (TEPCO) said on Wednesday it had asked local authorities in **Fukushima** Prefecture on the Pacific coast for approval to use mixed-oxide fuel (MOX) at its **nuclear** reactor.

MOX, a mixture of uranium and plutonium, can reduce **nuclear** fuel consumption at reactors by

between 20 and 30 percent because it is manufactured from spent fuel.

TEPCO plans to initially use MOX fuel at one of the six reactors at its **Fukushima** No 1 **Nuclear** Power Plant in the fourth quarter of 1999.

It can apply to the Trade Ministry for permission to use MOX only after it secures approval from the local government.

Currently, all of Japan's 51 commercial **nuclear** reactors use conventional uranium fuel. ((Tokyo Energy Desk +81-3 3432 3708 tokyo.energy.newsroom@reuters.com)).

Nucléaire - les Japonais veulent se mettre au Mox.

21 août 1998

Les Echos

ECHOS**LA** Français

INDUSTRIE

ÉNERGIE

Tokyo Electric Power (Tepco), la principale compagnie électrique japonaise, a annoncé hier avoir demandé aux autorités locales l'autorisation d'introduire du combustible Mox dans son réacteur **nucléaire** de **Fukushima**. Cette centrale serait ainsi la première au Japon à utiliser du Mox, un mélange d'uranium et de plutonium, qui permet de recycler une partie du plutonium produit par les centrales atomiques. Très contesté par les écologistes, le Mox est déjà largement utilisé en France, en Allemagne, en Suisse et en Belgique.

26 août 1998 : arrêt du réacteur n°1 à la suite d'une panne

PLATT'S - TEPCO's Fukushima nuke power plant shuts on malfunction.

Platts Commodity News

PLATT

Tokyo (Platt's)-26Aug98/225 am EDT/0625 GMT Japan's Tokyo Electric Power Co said Wednesday its 460,000 KW No 1 **Fukushima nuclear** reactor in **Fukushima** prefecture, northeast

Japan, automatically shut down at 10:53 am on Aug 26 due to a malfunction. The power company is now investigating the cause of the incident. There was no **nuclear** leak outside due to the accident, TEPCO said. The reactor was running at full rates when an unspecified problem occurred on the power transmission side, it said.

2 novembre 1998 : la préfecture de Fukushima accepte l'usage du MOX

Fukushima Prefecture ready to accept mixed-oxide nuclear plan.

BBC Monitoring Asia Pacific - Political

BBCAPP**NGC** BBC**GC** CTGBBC

Text of report by the Japanese news agency Kyodo

Tokyo, 2nd November: **Fukushima** Governor Eisaku Sato expressed Monday [2nd November] his government's readiness to be the site for Japan's first use of fuel containing plutonium at a **nuclear** power plant.

At a news conference, Sato consented to a plan by Tokyo Electric Power Co to use from next year mixed-oxide fuel at the **Fukushima** No 1 **nuclear** power plant in Okuma.

Fukushima became the first prefectural government to express an intention to accommodate such a plan.

Mixed-oxide fuel, the product of uranium mixed with plutonium extracted from spent **nuclear** fuel, is not currently used at any **nuclear** power plant in Japan.

Kansai Electric Power Co is also planning to use the fuel at the Takahama **nuclear** power plant in Fukui Prefecture along the Sea of Japan.

The Fukui prefectural government has not given approval to the plan. Source: Kyodo News Service, Tokyo, in English 0240 gmt 2 Nov 98.

6 décembre 1998 : 75% des résidents de la centrale de Kashiwazaki-Kariwa sont opposés à l'usage du MOX

75 pc of Niigata residents oppose plutonium use

Japan Economic Newswire

KYODO

NIIGATA, Japan, Dec. 6 --

About 75% of residents of Kashiwazaki and surrounding areas in Niigata Prefecture oppose a plan to use a plutonium fuel mix by 2000 at a nearby **nuclear** power plant on the Sea of Japan coast, according to survey results released Sunday.

The survey, conducted by a local civic group between August and November, also showed that 80% of the respondents thought a referendum was needed to make a decision on the "pluthermal" plan at the Kashiwazaki-Kariwa **nuclear** power plant operated by Tokyo Electric Power Co.

The group received 3,805 responses.

The pluthermal program involves burning pellets of mixed oxide (MOX) fuel, comprised of plutonium and uranium, inside light-water reactors to generate heat, which is turn tapped to generate electricity.

A similar program at a **nuclear** plant in **Fukushima** Prefecture received the prefectural government's approval last month.

According to the results, 75% opposed the plan and 3.4% supported it.

A total of 79.5% advocated holding a referendum, with more than half of the respondents saying a referendum should "definitely" be held. Those who said there was no need totaled 6.3% while 3.3% were strongly against it.

Shugo Hanyu, the head of the civic group, said his group has decided to initiate a petition in late January next year asking for a referendum.

25 janvier 1999 : incendie sur le réacteur n°1

Fire at Fukushima nuclear power complex extinguished.

BBC Monitoring Asia Pacific - Political

Text of report by the Japanese news agency Kyodo

Fukushima, Japan, 25th January: A fire that broke out Monday [25th January] at a **nuclear** power complex of Tokyo Electric Power Co in Naraha, **Fukushima** Prefecture, was put out shortly after it was discovered by plant workers, company officials said.

There is no concern of radioactive leakage from the company's No 2 **nuclear** power plant, northeast of Tokyo, and no-one was hurt in the incident, the officials said.

The fire broke out at around 1030 on the second floor of the turbine building of the No 1 reactor at the plant, which has been shut down for regular inspection since 17th December last year, according to the officials.

The Futaba regional fire department suspects that a solvent for resin used in inspecting and

repairing power generators caught fire, although the department is still investigating the fire, the company officials said.

The blaze is the second at the plant in a week. A small fire broke out in a waste disposal building last Tuesday, the officials said.

Source: Kyodo News Service, Tokyo, in English 0723 gmt 25 Jan 99.

8 février 1999 : TEPCO déclare que son plus vieux réacteur (28 ans) peut encore fonctionner 32 ans

TEPCO says oldest reactor safe for another 32 yrs.

Reuters News

LBA

TOKYO, Feb 8 (Reuters) - Tokyo Electric Power Co Inc said on Monday its 28 year old **nuclear** reactor, with due repairs, could be operated safely for another 32 years without any technical problems.

A TEPCO spokesman said the power utility submitted a report of its evaluation of the 460-megawatt reactor - its smallest and oldest - of the **Fukushima** No.1 plant to the Trade Ministry on Monday.

TEPCO's move follows a report by the Trade Ministry in April 1996 which said old reactors could safely continue operation if appropriate maintenance work were carried out and inspections were made.

TEPCO said it would conduct similar evaluations on other reactors, after they become around 30 years old. ((Tokyo Energy Desk +81-3 5473 3708 tokyo.energy.newsroom@reuters.com)).

Japanese nuclear operators say plants can run safely for up to 60 years.

8 février 1999

BBC Monitoring Asia Pacific - Political

BBCAPP**NGC** BBC**GC** CTGBBC

Text of report by the Japanese news agency Kyodo

Tokyo, 8th February: Three leading **nuclear** power plant operators submitted to authorities Monday [8th February] a report which may pave the way for keeping atomic power plants running for up to 60 years, officials said Monday.

In the report to the agency of natural resources and energy, Tokyo Electric Power Co, Kansai Electric Power Co and Japan Atomic Power Co concluded that with proper maintenance, there will be no technical problem with the safety of **nuclear** power reactors even if they run for 60 years.

Currently, the life of **nuclear** power plants is assumed to be 30-40 years.

To prepare the report, the three companies conducted detailed technical assessments of Japan Atomic Power's Tsuruga plant and Kansai Electric Power's Mihama plant, both of which are located in Fukui Prefecture and began operating in 1970, and Tokyo Electric Power's plant in **Fukushima** Prefecture, which was put into service in 1971.

The agency forwarded the report to the **Nuclear** Safety Commission, Japan's policy-making body on **nuclear** safety, later in the day with a comment that it will endorse the report, agency officials said.

Based on the report, the agency is expected to write safety guidelines on **nuclear** power plants in fiscal 1999 so that they can run for a long period of time.

The report was compiled at a time when Japanese electric power companies are faced with difficulties building new **nuclear** power plants and public concern is growing about the safety of ageing reactors.

Source: Kyodo News Service, Tokyo, in English 0902 gmt 8 Feb 99.

TEPCO aims to prolong life of nuclear reactors. BY By Miho Yoshikawa

31 mars 1999

Reuters News

LBA

FUKUSHIMA, Japan March 31 (Reuters) - Clad in uniforms of shiny baby-blue overalls, hard hats and gloves, a handful of men are busy at work deep in the heart of the **Fukushima** Daiichi **nuclear** power station's No. 2 reactor in northern Japan.

Tokyo Electric Power Co (TEPCO), the world's largest private power utility, is taking advantage of an annual maintenance shutdown to refit the reactor with a 35-tonne stainless steel cylinder shroud.

TEPCO hopes the face-lift will enable it to operate the 28-year-old power station, its oldest, for another 30 years or more.

"Both our own evaluations and those of the government say that we can safely run the plant for 60

years," a TEPCO spokesman said.

TEPCO became the world's first utility to replace a **nuclear** reactor's shroud - which provides a passage for coolant - when it completed work on **Fukushima** Daiichi's No. 3 reactor last year. Two other reactors are due for a similar overhaul.

The power company discovered cracks in the shroud of the 784,000 kilowatt No. 2 unit during maintenance checks in 1994.

By law, maintenance must be conducted every 13 months and the accompanying shutdown usually lasts 40 to 50 days, with the replacement of components and other tasks inside the reactor core usually carried out by robots.

The work at **Fukushima** Daiichi, however, is expected to take a full year and the reactor had to be decontaminated to make it safe for human workers.

With some of Japan's oldest **nuclear** power plants nearly 30 years old, the industry needs to address the issue of how long a reactor can be operated safely.

There are no binding laws or guidelines in Japan that set down the lifespan of a **nuclear** reactor, and there is no industry consensus as to how long reactors can safely be operated beyond a widely accepted 30-year minimum.

A year ago, Japan Atomic Power Co's 166,000-kilowatt **nuclear** reactor on the Pacific coast became Japan's first **nuclear** plant to be shut down and dismantled after 31 years of operation. It was Japan's oldest commercial reactor.

The decision to close the plant was largely due to economics. It was the only reactor in Japan using graphite as its moderator and carbon dioxide gas as its coolant, resulting in operation costs that were double those of other commercial reactors.

TEPCO said that whether it actually operated **Fukushima** Daiichi for another 32 years would depend on the economics of the plant.

The cost of replacing a shroud is more than 10 billion yen ($83 million), while maintenance checks on a reactor cost on average four to five billion yen.

Those costs are slight, however, compared with the average 350 billion to 400 billion yen cost of building a new reactor.

"(We decided to change the shroud) because we believe that it makes economic sense to do so," the TEPCO spokesman said.

Finding a site to build a new plant could also be difficult, given the unpopularity of Japan's **nuclear** policy following a spate of **nuclear** plant mishaps in recent years, including clumsy coverup attempts. ($1=120 yen) ((Tokyo Energy Desk +81-3 5473 3708 tokyo.energy.newsroom@reuters.com)).

27 avril 1999 : le Japon envisage de développer son nucléaire civil

Atermoiements japonais sur l'avenir du nucléaire civil.

La Tribune

TRDS**LA** Français

ENQUÊTE

Pour le français Cogema qui retraite une partie de ses déchets nucléaires, le Japon est un client aussi important que l'Allemagne

Tokyo envisage un développement du programme **nucléaire** pour lutter contre l'effet de serre.

Mais les partis politiques ne veulent pas se saisir d'un dossier fort peu populaire, et des incertitudes pèsent sur l'avenir de ce programme.

Le dernier convoi de déchets nucléaires en provenance de France, arrivé dans l'archipel le 15 avril dernier, n'a pas déclenché de manifestations aussi hostiles que les précédents.

Au Japon, le **nucléaire** reste un dossier toujours aussi sensible. La question revient dans l'actualité à chaque retour depuis la France ou l'Angleterre, vers le Japon, d'un chargement de déchets à haute radioactivité. Le dernier en date ne remonte qu'au 15 avril dernier, lorsque le quatrième convoi en provenance de France et qui avait quitté Cherbourg le 25 février est arrivé à Rokkasho, dans le nord de l'archipel, avec 1.600 tonnes de déchets vitrifiés à son bord. Toutefois, alors que l'arrivée des précédents convois avait mobilisé plusieurs centaines de manifestants contre le **nucléaire**, une trentaine seulement étaient présents cette fois et ont exprimé dans le calme leur opposition. Le dossier pourrait toutefois rebondir à nouveau cette année, où l'on attend également l'arrivée du premier convoi de plutonium sous forme de MOX (mixed oxyde fuel) destiné à être brûlé dans des centrales électriques. Et même si l'Allemagne a finalement repoussé aux calendes grecques la fin de son programme **nucléaire** après un débat confus et stérile au sein du gouvernement de Bonn, l'opinion japonaise n'en aura retenu que l'effet d'annonce initial: l'Allemagne ose envisager la fin de son programme **nucléaire**.

Des contrats essentiels pour la Cogema

Les Français, liés aux Japonais dans ce domaine par de nombreuses coopérations et contrats commerciaux, observent avec une attention soutenue l'évolution du dossier sur le terrain. Dans l'activité du retraitement des combustibles nucléaires usés, le Japon est l'un des premiers clients de la Cogema (Compagnie Générale des Matières Nucléaires) à égalité avec l'Allemagne. Les contrats signés en 1977 pour le retraitement du combustible **nucléaire** usé japonais étant pratiquement arrivés à échéance, la Cogema est à présent en phase de négociation avec les dix électriciens japonais pour la signature de nouveaux contrats. En 2000, les usines de la Hague auront retraité 3.000 tonnes de combustible issu des réacteurs japonais, pour une somme d'environ 20 milliards de francs. Le renouvellement de ces contrats représente un enjeu capital. Avec un chiffre d'affaires annuel au Japon de l'ordre de 4 milliards de francs, Cogema est l'une des premières entreprises exportatrices françaises au Japon. Or le climat dans lequel vont se négocier les nouveaux contrats apparaît beaucoup moins favorable qu'il y a vingt ans.

Objectif: réduire les émissions de CO2 de 6 %

En visite à Tokyo, Jean-Louis Ricaud, directeur de la division des combustibles nucléaires et du retraitement de Cogema, se déclare confiant dans la poursuite du programme volontariste du gouvernement japonais en matière de développement **nucléaire** et dans le rôle que l'industrie française sera amenée à jouer à ses côtés, en concurrence avec l'industrie anglaise (BNFL), qui retraite également une partie des déchets japonais. « Compte tenu des engagements pris à Kyoto il y a deux ans, explique Jean-Louis Ricaud, le Japon se doit de développer son programme **nucléaire** pour assurer la croissance et la satisfaction de ses besoins en électricité, et le gouvernement japonais a annoncé qu'il prévoyait 10 à 20 tranches nucléaires supplémentaires en service d'ici à 2010. Cela signifie que dans dix ans, il y aura plus de centrales nucléaires au Japon qu'il y en a aujourd'hui en

France. » En effet les données de base de la situation énergétique du Japon motivant la politique gouvernementale n'ont pas changé. D'une part l'archipel entend restreindre autant que possible sa dépendance de l'étranger pour l'approvisionnement en pétrole, gaz et charbon, d'autre part, l'absence d'uranium sur le territoire japonais encourage les autorités dans le développement du recyclage des combustibles nucléaires. En outre, lors de la conférence de Kyoto en décembre 1997 sur le réchauffement de la planète, le Japon s'est fixé pour objectif d'abaisser les émissions de CO2 de 6 % par rapport au niveau de 1990. De fait, les autorités s'apprêtent à publier un texte sur la politique du gouvernement en matière de lutte contre le réchauffement de la Terre qui, selon les fuites obtenues par le grand quotidien Mainichi, comporterait un passage sur la nécessité de développer la production d'électricité d'origine **nucléaire**. Cette mention, qui ne figurait pas dans la première ébauche du projet en décembre, aurait été ajoutée sous la pression des milieux industriels nippons, et notamment des compagnies d'électricité. Malgré tout, un certain nombre de facteurs humains et économiques entravent continuellement la logique de l'Etat en faveur du **nucléaire**.

Le gouvernement prévoit que la part du **nucléaire** dans la consommation globale d'électricité qui est de 35 % actuellement dépasse les 40 % en 2010. Mais la réalisation d'un tel objectif se heurte aux pouvoirs locaux, sous la pression de l'opinion. Les problèmes rencontrés lors de l'arrivée au Japon du tout premier convoi de déchets nucléaires à haute radioactivité en 1994 illustrent bien la situation. Après quarante jours de mer, la cargaison s'est trouvée bloquée au large du port de Mutsu Ogawara, car le gouverneur de la préfecture d'Aomori, seul habilité à octroyer le droit d'accoster, voulait obtenir auparavant une promesse de l'Agence des sciences et technologies que les déchets seraient simplement de passage dans sa préfecture, qui en aucun cas ne se transformerait en site de stockage permanent. Soumise à la pression des événements, la STA a dû céder, créant ainsi un fâcheux précédent depuis, aucune préfecture n'a accepté de se porter candidate au stockage permanent des déchets.

Des négociations locales toujours laborieuses

A la suite d'une série d'accidents au surgénérateur de Monju en 1995, puis à Tokai en 1996 assortis de tentatives de dissimulation dénoncées par de violentes campagnes de presse, l'influence des pouvoirs locaux et des groupes de résidents réfractaires au **nucléaire** n'a cessé de se renforcer.

Les résidents de Maki sont ainsi parvenus à empêcher la construction d'un nouveau réacteur. Le programme gouvernemental a subi un tel retard que les électriciens considèrent désormais les objectifs gouvernementaux avec une certaine distance.

Les électriciens japonais sont engagés dans des négociations laborieuses avec les autorités locales à chaque étape du développement de leurs opérations. Mais, même lorsque le gouvernement local leur accorde l'autorisation de procéder à la construction d'un nouveau réacteur, comme c'est le cas à Oma où le premier réacteur directement conçu pour brûler du MOX devrait commencer ses opérations commerciales dès 2007 sur la base du projet initial, il se trouve un petit propriétaire placé au centre du terrain convoité capable de retarder indéfiniment la mise en route du projet. Sur la vingtaine de projets annoncés par le gouvernement, au moins six d'entre eux posent de sérieux problèmes.

Les obstacles surgissent également dès qu'il s'agit de convertir un réacteur **nucléaire** classique (à uranium) en réacteur pour la combustion du MOX. Le plus gros producteur d'électricité, dont le siège est à Tokyo, Tepco, envisage la conversion de quatre réacteurs, dont deux seulement ont été désignés: celui de **Fukushima**, qui devrait suspendre ses opérations dès le mois d'octobre pour être chargé avec le MOX venant de France, l'autre, Kashiwasaki Karima dans la préfecture de Niigata, est en butte aux résistances locales. Les associations antinucléaires rassemblent les signatures pour un référendum. Comme l'explique un responsable de Tepco, « les objectifs ne changeront pas, mais l'application et le rythme du programme peuvent subir un retard important. En tout cas, pour nous, le document consignant le programme à long terme du gouvernement ne veut plus dire grand-chose ». Une nouvelle version de ce programme (dont la dernière édition date de 1994) est en préparation. Reste à savoir dans quelle mesure il pourra répondre aux attentes des électriciens japonais et de

leurs partenaires étrangers.

Sophie Malibeaux, à Tokyo.

La Tribune

28 juin 1999 : des groupes anti-nucléaires demandent au Japon de renoncer au traitement du plutonium

Japan urged to stop planned shipment of plutonium.

Japan Energy Scan

JPES

SEOUL, June 22 Kyodo

South Korea's leading environmental group and Greenpeace International urged Japan on Tuesday to stop its shipments of 440 kilograms of plutonium from France and Britain scheduled for July.

In a statement, Greenpeace and the Korean Federation of Environmental Movements (KFEM) said, "A shipment of weapon-usable plutonium will soon depart from Europe for Japan's west coast, creating a new threat to the environment surrounding the Korean Peninsula and the East Sea (Sea of Japan)."

According to the statement, one ship will deliver a cargo of over 220 kg of plutonium to Takahama **nuclear** power plant in Fukui Prefecture in Japan. The ship is expected to pass through the Korea Strait in mid-September.

Another ship will carry around 220 kg of plutonium to **Fukushima nuclear** power plant on the northeast coast of Japan.

The most direct route to Takahama could take the shipment less than 50 kilometers from the southeastern South Korean city of Pusan.

"This coastline and seas are of major importance for fishing communities and tourism in (South) Korea," said KFEM Secretary General Choi Yul said.

"This shipment is potentially only the beginning of a deadly new phase in Japan's plutonium program, and this time the Korean environment is more directly threatened than ever before," Choi said.

Describing the plutonium-carrying ships as a "floating Chernobyl," Choi also said the consequences would be "disastrous" if any major accident occurred along the routes.

30 juin 1999 : La France va envoyer du MOX au Japon

France to ship MOX fuel to Japan this year

Japan Economic Newswire

KYODO

PARIS, June 30 --

France's national **nuclear** power company COGEMA said Wednesday it will carry out transportation of mixed plutonium-uranium oxide (MOX) fuel to Japan by two armed ships before the end of the year.

COGEMA has not make public the departure date, the port of departure or route for security reasons.

MOX fuel is a combination of uranium and plutonium extracted from spent **nuclear** fuel.

The company said it and British **Nuclear** Fuels Plc have been packing the MOX fuel bound for Tokyo Electric Power Co.'s **Fukushima** No. 1 **nuclear** power plant and for Kansai Electric Power Co.'s Takahama No. 2 **nuclear** power station in Fukui Prefecture.

COGEMA said it was not releasing details about the shipment yet to minimize the risk of a terrorist hijacking.

It said it would announce the date and port of departure one or two days before the ships leave for Japan, and the route and arrival schedule after the ships leave European waters.

Last April, a British ship carrying reprocessed **nuclear** waste entered a port in the village of Rokkasho in Aomori Prefecture, northeastern Japan. It was the fourth shipment of its kind since 1995.

16 juillet 1999 : deuxième chargement de MOX français pour le Japon

Second load of nuclear fuel for Japan leaves French plant

Agence France-Presse

AFPR

VALOGNES, France, July 16 (AFP) - A second shipment of recycled **nuclear** fuel for Japanese power stations left the French reprocessing plant late Thursday to be loaded on to a freighter in the northern port of Cherbourg.

The two special containers of fuel were taken under heavy police guard from the plant at La Hague to be put on a train for Cherbourg at nearby Valognes.

Three containers of the uranium and plutonium fuel known as MOX had been loaded Monday after police cleared Greenpeace protestors from two cranes in the docks at Cherbourg and a court slapped

an injunction on the environmental group.

The ecological movement, barred from approaching within 100 metres (yards) of the consignment under pain of heavy fines, made no attempt to intervene Thursday.

The container ship is to sail before the end of July, linking up with another from Barrow-in-Furness, northwest England, for the voyage to Japan by an undisclosed route.

British **Nuclear** Fuels is also seeking an injunction in a London court Friday to stop Greenpeace from disrupting its shipment to Japan of recycled **nuclear** fuel.

Representatives of the environmental campaign group have been asked to be at the High Court in London for 10:00 a.m. (0900 GMT) Friday, they said.

Greenpeace claims that the ships will be carrying enough **nuclear** fuel aboard to make 60 **nuclear** bombs.

"If a government or paramilitary force seizes this cargo it could have a **nuclear** weapon within three weeks," spokesman Jean-Luc Thierry said Saturday.

Greenpeace has also charged that security measures were inadequate, as the two freighters would travel without naval escort.

The group said the two vessels had been recently fitted with three 30mm cannon each and were expected to protect each other against potential attack.

A security force of 26 officers from the British Atomic Energy Agency Constabulary, who normally patrol British **nuclear** facilities, will also be aboard.

Greenpeace also said that in Japan the plutonium fuel would be loaded into conventional **nuclear** power reactors operated by Kansai Electric Power Company (KEPCO) at Takahama and Tokyo Electric Power Company (TEPCO) at **Fukushima**.

"These reactors were never designed to use this type of fuel and it will reduce their operating safety margins," Greenpeace said.

10 septembre 1999 : arrivée attendue du MOX français à Fukushima

Nuclear fuel cargo ships to arrive in Japan September 22: report

Agence France-Presse

AFPR

TOKYO, Sept 10 (AFP) - Two armed cargo ships carrying mixed plutonium-uranium oxide (MOX) fuel produced in Britain and France will arrive in Japan on September 22, a report said Friday.

The 4,648-tonne Pacific Teal and the 5,087-tonne Pacific Pintail are to arrive in **Fukushima**, some 200 kilometers (124 miles) north of Tokyo, Kyodo News said, quoting sources.

After unloading some of the MOX fuel containers at a **Fukushima** plant run by Tokyo Electric Powerources said.

The two freighters, which left the British port of Barrow-in- Furness on July 19, are currently in the

Tasman Sea, east of Australia, Kyodo said.

The ships, each armed with three 30-millimeter (1.2-inch) cannons, sailed through the Cape of Good Hope at the southern tip of South Africa after cruising southbound across the Atlantic.

The fuel carried by the ships contained some 450 kilograms (990 pounds) of plutonium, news reports said. MOX fuel is a combination of uranium and plutonium extracted from spent **nuclear** fuel.

A spokesman for Tokyo Electric Power declined to confirm the report. "We have said the arrival is likely to be late September, but we have not announced any specific date," he said.

28 septembre 1999 : manifestations au Japon contre l'arrivée du MOX français

Protests greet nuclear cargo arrival in Japan.

The Scotsman

SC

3

Christopher Cairns.

BRITISH shipments of plutonium for **nuclear** reactors have arrived in Japan after a two-month voyage, writes Christopher Cairns.

The two British **Nuclear** Fuels vessels were greeted at the northern Japanese port of **Fukushima** yesterday by similar protests to those seen in July, at their departure from Barrow in Cumbria and Cherbourg in France. Environmentalists demonstrated against what they see as a dangerous proliferation of the trade in **nuclear** material.

The Pacific Teal and the Pacific Pintail each carried approximately 200kg of mixed-oxide plutonium (MOX), which the environmental group Greenpeace claims is enough bomb-grade material to make 60 **nuclear** weapons.

The controversial shipment - the first of what BNFL and the Japanese **nuclear** industry hopes will be many in the next ten to 15 years - took place despite protests from several countries, including Ireland, South Africa and New Zealand.

Demonstrations at the time of the departure from Barrow resulted in Greenpeace campaigners being arrested. There was also a ban on the pressure group's vessel, the MV Greenpeace, entering British waters as it tried to follow the two BNFL vessels to Cherbourg.

Tokyo Electric Power, Japan's largest utility company, will use the MOX fuel pellets in light-water reactors at its **Fukushima** No 3 plant from February, said a company spokesman.

The Teal completed unloading at **Fukushima** last night and has rejoined the Pintail, which was moored offshore. The vessels are heading for Fukui, where the Pintail's cargo of MOX, from the Sellafield **nuclear** plant, will be unloaded for use in the Takahama **nuclear** power station.

Both ships are fitted with 30mm cannon and carry an armed unit of BNFL police - neither of which, according to Greenpeace, would have been any use had the shipments been targeted by terrorists seriously intent on seizing the cargo.

The Teal was met by protesters aboard Greenpeace's Arctic Sunrise ship, which was surrounded by ten Japanese vessels carrying commandos in riot gear. The protesters launched three inflatables carrying protest banners, but they were prevented from blocking the ship's passage.

Nuclear power is the source of about 30 per cent of Japan's electricity and is considered crucial by the Tokyo government to meet the country's growing energy needs.

A spokesman for BNFL said last night: "We have been involved in **nuclear** shipments for more than 30 years but this particular operation was the first of its kind and it is pleasing that things have gone smoothly. The vessels had an incident-free journey and have arrived on schedule."

8 octobre 1999 : fuites radioactives dans un dépôt de déchets de la centrale de Fukushima

Slight Radiation Leak Discovered In Northern Japan

Dow Jones International News

DJI

TOKYO (AP)--A small amount of radiation leaked from barrels at a disposal center for contaminated materials, officials said Friday, just a week after Japan's worst-ever **nuclear** accident.

The amount of radiation released was far below the level set by law as safe, said Shuetsu Shimaya, an official with Japan **Nuclear** Fuel, the company that discovered the leaks.

The leaks follow a **nuclear** accident at a uranium reprocessing plant outside Tokyo that exposed 49 people to radiation and heightened already rising fears in Japan about lax safety standards at **nuclear** facilities.

Shimaya said the leaks, at a disposal center in Rokkasho, 575 kilometers northeast of Tokyo, were discovered during an inspection.

The barrels contained radioactive material from a Tokyo Electric Power Co. (J.TER) **nuclear** power plant in **Fukushima** Prefecture. One barrel was found leaking on Sept. 28 and the second one was discovered Thursday.

The disclosure came as authorities were mounting inspections of the nation's **nuclear** facilities to check on safety standards and prevent further accidents.

An investigation into last week's accident, in Tokaimura, 110 kilometers, found that operator JCO Co. regularly skipped crucial security steps and ordered employees to cut corners to save time.

Fears about the Tokaimura plant are causing more suffering for residents by driving down prices for farm goods produced there and prompting a rash of cancellations at the region's tourist hotels.

(END) Dow Jones Newswires 08-10-99

Emanations radioactives "faibles" détectées au Japon *.

8 octobre 1999

Reuters - Les actualités en français

REUTFR**LA** Français

TOKYO, 8 octobre (Reuters) - Des émanations radioactives en faible quantité se sont échappées de deux barils de déchets nucléaires dans le nord du Japon, a fait savoir vendredi la compagnie Tokyo Electric Power. * La société enquête sur la cause de cette fuite, jugée trop faible pour être nocive pour la population. Ces révélations surviennent une semaine après le plus grave accident **nucléaire** au Japon, le 30 septembre à l'usine de retraitement de Tokaimura, où une cinquantaine de personnes ont été exposées à des radiations. * Selon Tokyo Electric Power (Tepco), les deux barils font partie d'un stock de 1.760 barils de déchets nucléaires faiblement radioactifs, qui ont été transportés en septembre d'une centrale **nucléaire** située à **Fukushima** vers un entrepôt de déchets situé sur la commune de Rokkasho (préfecture d'Aomori) dans le nord du pays.

* Une inspection de routine, réalisée vendredi, a mis en évidence des traces de fuites sur deux barils, dit la firme, qui soutient que l'incident n'aura aucun impact sur l'environnement. /EF.

1 janvier 2000 : le "bug de l'an 2000" frappe quelques équipements dans les centrales japonaises

Minor faults strike Japanese nuclear plants as 2000 dawns by Shino Yuasa = (PICTURE) = ATTENTION - RECASTS with more hitches ///

Agence France-Presse

AFPR

TOKYO, Jan 1 (AFP) - Minor computer-related faults struck seven **nuclear** facilities in Japan at the start of 2000 Saturday and a few of them could be related to the millennium bug, officials said.

None of the glitches, three of them occuring within one hour into the new millennium, posed any danger despite vexing a nation still haunted by a serious **nuclear** accident three months ago, they said.

Six of the facilites were **nuclear** power plants.

At a power plant of Tokyo Electric Power Co. in **Fukushima**, north of Tokyo, a panel displaying the state of control rods in a reactor showed an erroneous date of Feburary 6, 2036, at about 9:00 a.m. (0000 GMT).

"It occur

red under mysterious circumstances," said Yoshinori Moriyama, the head of **nuclear** power plant operations at the government's natural resources and energy agency.

"We have yet to determine if it is related to Y2K problems although the company says there may be no connection," he said.

At another power plant in Ishikawa, central Japan, a system to monitor radiation levels malfunctioned immediately after the turn of the year, officials said. Two of the five monitoring computers stopped displaying data.

"This incident may possibly be related to Y2K," Moriyama said.

At a power plant in Onagawa, northern Japan, an alarm sounded for 10 minutes just two minutes after midnight, indicating faulty transmissions of data on radiation levels, sea water temperature and other factors.

But similar glitches have been observed in the past two months and were seen as unrelated to the millennium bug.

At a centre for storing high-level **nuclear** waste in Aomori, at the northern tip of Honshu Island, a date display in equipment for controlling and monitoring operations indicated "1999/01/01" instead "2000/01/01."

The error occured during a regular time-readjustment operation in the morning. "We cannot rule out the possibility of a Y2K trouble," said Hidefumi Iida, a spokesman for the centre.

Fears about **nuclear** power have increased in Japan since September 30 when three workers at a uranium processing plant in Tokaimura, northeast of Tokyo, set off the world's worst **nuclear** disaster since Chernobyl in 1986. One of the workers died on December 22.

In Washington, a US State Department official, who asked not to be named, downplayed the two glitches in the first hour as not related to Y2K. The incidents were of the type "that happens at **nuclear** power plants all over the world on any day of the year," he said.

Fifty minutes into the new millennium, Prime Minister Keizo Obuchi addressed the nation on television declaring that "fortunately, we have not heard of any situation affecting people's lives."

Deputy Chief Cabinet Secretary Fukushiro Nukaga later told a news conference, "We have confirmed that no major problems have occured in such areas as energy, transportation, **nuclear** power and medical services."

However, minor computer hiccups were reported across the country in the morning, including false displays of dates in computers at central and local government offices and faulty services of train ticket vending machines.

Ticket vending machines at a dozen stations of East Japan Railway Co. broke down or showed false dates. The problems were solved later, company officials said.

At the state weather agency, some of its systems showed "100" instead of "00" at the turn of the year.

In Osaka, monitoring devices at a telecommunications centre, providing circuits to 1,300 companies, failed to register correct dates two minutes after midnight.

FOCUS Plus d'anomalies dans les centrales nucléaires japonaises. BY par Elaine Lies

2 janvier 2000

Reuters - Les actualités en français

REUTFR**LA** Français

TOKYO, 2 janvier (Reuters) - Les dysfonctionnements informatiques survenus dans quatre centrales nucléaires japonaises, dont un au moins est avec certitude lié au bogue de l'an 2000, ont tous été résolus et n'ont affecté ni la sécurité des infrastructures ni les réseaux d'alimentation en électricité, ont déclaré dimanche les compagnies d'électricité.

Cinq anomalies, la plupart dans les systèmes de surveillance du taux de radioactivité et autres données, avaient été signalées samedi dans les centrales, entâchant le bon passage du Japon à l'An 2000 dans toute une gamme d'autres secteurs. La situation est revenue à la normale samedi en début de soirée, a déclaré dimanche un responsable du ministère du Commerce, ajoutant qu'on ne signalait aucun nouveau dysfonctionnement depuis.

Les compagnies d'électricité ont déclaré enquêter sur l'origine exacte de ces dysfonctionnements.

A la centrale **nucléaire** n°2 de **Fukushima** au nord de Tokyo, qui appartient à la société Tokyo Electric Power (TEPCO), les données sur la position des barres servant à contrôler les réactions nucléaires n'ont pas été envoyées à l'écran d'ordinateur habituel, même si les données en question étaient bien sur le disque dur de l'ordinateur.

"Il est trop tôt pour dire avec certitude que cela était lié au bogue de l'An 2000", a déclaré un porte-parole de TEPCO, première compagnie nippone d'électricité.

Jamais la sécurité n'a été affectée et la position des barres a pu être vérifiée par d'autres moyens, jusqu'à ce que le problème ait pu être corrigé samedi dans l'après-midi. L'enquête menée a déterminé que l'ordinateur avait reprogrammé sa date à février 2036. Les techniciens ont corrigé la date et les opérations ont repris normalement, dit un porte-parole de TEPCO.

[...]

SE World Politics and Policy

10 janvier 2000 : TEPCO repousse ses projets d'utilisation du MOX dans le réacteur n°3

Tepco Defers Plan to Use MOX Fuel at Nuclear Plant

Dow Jones Newswires

The Asian Wall Street Journal

AWSJ

5

TOKYO -- Tokyo Electric Power Co. postponed its plan to use MOX fuel -- mixed oxide of uranium and plutonium -- at its **Fukushima** No. 3 **nuclear** reactor, following a request from the Ministry of International Trade and Industry to re-examine data on the safety of the fuel, which is supplied by a Belgian company.

In December, a data-falsification scandal surfaced at a British MOX supplier to Kansai Electric Power Co.

Tepco had planned to begin using MOX fuel at its **Fukushima** reactor in February. Both Tepco and Kansai Electric received their first shipment of the reprocessed MOX fuel from Europe in late September.

Le Japon s'interroge sur l'utilisation de Mox dans ses centrales nucléaires.

10 janvier 2000

Les Echos

ECHOS**LA** Français

INDUSTRIE

ÉNERGIE

Le Miti a commandé une étude sur le Mox, alors que les centrales nucléaires du pays semblent de moins en moins prêtes à utiliser ce combustible qui contient du plutonium.

Une compagnie électrique japonaise a annoncé vendredi le report de son projet d'utiliser un stock de combustible **nucléaire** recyclé Mox (mixed oxydes fuel) en provenance de Belgique, à la suite d'une affaire de falsification de documents par un concurrent britannique. Cette décision représente un nouveau revers pour l'adoption de la technologie Mox par le Japon, où le **nucléaire** est davantage craint depuis l'accident de Tokaimura, le 30 septembre dernier. Combustible composé d'un mélange d'uranium et de plutonium, le Mox, produit essentiellement par la Cogema, qui retraite le combustible **nucléaire** usé des centrales japonaises, doit en théorie être utilisé peu à peu par quelque 16 à 18 centrales nucléaires du Japon.

La Tokyo Electric Power Co (Tepco) a indiqué qu'elle repoussait à une date ultérieure le programme qui comprenait l'utilisation de Mox fourni par Belgonucléaire pour la centrale de **Fukushima**, au nord de Tokyo. Elle avait prévu de commencer à brûler le carburant en février. Tepco a mis en avant la nécessité de mener un contrôle approfondi du stock, toujours en Belgique, à la suite du scandale provoqué par la compagnie britannique BNFL, qui a reconnu avoir faussé des tests sur son stock à destination du Japon. « Nous devons attendre la conclusion des études afin de déterminer dans quel délai nous pourrons débuter l'utilisation du Mox », a indiqué un porte-parole de Tepco, Takeshi Takamori.

Le groupe privé Kansai Electric Power avait déjà décidé en décembre de ne pas utiliser, par

précaution, le Mox produit par BNFL, et le 18 novembre, Tepco avait aussi déjà annoncé le report d'un an de l'emploi d'un stock de Mox fourni par la compagnie française Cogema à la demande des autorités locales, soucieuses d'apaiser les craintes de la population après l'accident de Tokaimura. La compagnie affirmait toutefois que son programme Mox n'était pas remis en cause mais seulement différé. Il n'empêche que la question de l'utilisation du Mox comme prévu par les centrales nucléaires japonaises soulève de nombreuses questions. Ryuji Fukaya, le ministre de l'Industrie et du Commerce International (Miti), a ainsi indiqué vendredi avoir demandé une étude « pour s'assurer que le Mox était sûr » afin de gagner « la confiance de la population ».

SE Foreign Desk; Section A

Accident Makes Japan Re-examine A-Plants BY By HOWARD W. FRENCH

13 janvier 2000

The New York Times

NYTF

Page 1, Column 2

TOKYO, Jan. 11 -- The director of Tokyo's huge electric power company made no mention of public opinion when he announced the postponement of plans to use a new plutonium fuel.

But the politician he was with when he made the announcement, Gov. Eisaku Sato of the **Fukushima** prefecture, the site of many **nuclear** plants, left no doubt that the public's newly raised suspicions about **nuclear** power were precisely what the postponement was all about.

This was no time for an expansion of the **nuclear** program, Mr. Sato said, citing Japan's worst **nuclear** accident, in September, which killed one worker and exposed scores of people to radiation. "Now is the time for mourning," Mr. Sato said.

The brief meeting between the industry chief and the governor illustrated how sharply the ground has begun to shift under Japan's electric utilities since workers set off the accidental chain reaction at Tokaimura, 70 miles north of Tokyo.

The accident forced a partial evacuation of the town and set off a death watch for the irradiated workers. And, more than any event in a history full of serious mishaps, it rattled the ironclad coalition between industry and government that has long made Japan, a country with precious few domestic sources of energy, the world's most ambitious user of **nuclear** energy, providing one-third of its supplies.

Strikingly, in a country known for its political quiescence, the sharp movement of public opinion against **nuclear** power has taken the form of a genuine groundswell, from subway straphangers horrified by stories about safety lapses and small civic groups that have started petition drives against the industry's expansion to local political candidates who are running for office on the issue.

Public protest has not been common in Japanese society for well over a generation, having mostly died out since Japan attained the level of affluence of many Western countries, starting in the 1960's.

But in recent years -- timidly at first, and then with growing speed --localized movements have been

springing up and asserting themselves more boldly, notably in the courts, to protect consumer interests or the environment.

Since the Tokaimura accident, small citizens' groups, encouraged by the spreading awareness of the risks of **nuclear** energy, have sued regional power companies to prevent the introduction of the new plutonium fuel and petitioned local governments to block plant construction. A scandal involving the falsification of inspection data by the British maker of plutonium pellets has also strengthened resistance.

The grassroots activists have put the **nuclear** industry on the defensive in ways that recall its decline in the United States and much of Europe after the accidents at Three Mile Island and Chernobyl.

In the clearest example of the impact of local mobilization, Mayor Takaaki Sasaguchi of Maki, in the Nigata prefecture, used his announcement of his re-election campaign today to declare his opposition to plans to build a new plant in his city.

The industry, citing unflinching support from the national government and Japan's near total dependence on imported fuels, has pledged to stick to its plans for plutonium, which it describes as a step toward developing so-called fast-breeder technology.

With fast-breeder reactors, whose development remains, perhaps, decades away, proponents say Japan will be able to produce more plutonium fuel than it consumes and achieve the holy grail of energy independence.

In the meantime, industry officials say they merely need to be patient until public passions against **nuclear** energy die down, and they will proceed with plans to build many plutonium-burning plants.

"There is only enough uranium in the world to last 72 years, and our country is not endowed with fossil fuels," the chairman of the Federation of Electric Power Companies, Hiroji Ota, said. "There are some other alternative power sources like solar and wind energy. But they all present technical problems. For all these reasons, MOX fuel is appropriate for Japan."

MOX, or mixed oxide, fuel is the new plutonium-based fuel that the largest utilities had planned to start using late last year.

In western Takahama, a former fishing village that is home to four **nuclear** power plants, the surprising face of the antinuclear activism is a citizens' group largely made up of homemakers and elderly people. Judging from the group's determination, the utilities may be underestimating the opposition.

In October, the group started a drive that collected 2,170 signatures in a town of fewer than 9,000 inhabitants. The focus of the drive, like that of much of the recent opposition to **nuclear** power in Japan, is the new plutonium-based fuel.

On a recent morning, the group delivered a letter to Mayor Riichi Imai, exquisitely polite in their protocol in a typically Japanese manner but absolutely firm in their message -- the town must refuse the new fuel.

Lighting a cigarette, Mr. Imai refused to commit himself, saying he would explain his position soon before the regional assembly. That provoked a bitter laugh from Masae Sawayama, 90, the group's doyenne.

"It occurred to me that our mayor might do like most politicians do and go tell a bunch of lies later," Ms. Sawayama said.

The uphill struggle of the group becomes clear on entering City Hall, where large interactive displays show idyllic color images of the town's plants nestled in the hills by a rocky bay. Even public parks there are decorated with statues and monuments that commemorate mastery of the atom.

Fishing has almost disappeared as a way of life. Nowadays, whether directly or indirectly, the regional utility, the Kansai Electric Power Company, employs the bulk of the population.

The electric company has spared no effort to keep the townspeople on its side, subsidizing regular bus tours to its headquarters in Osaka, more than two hours away, for safety briefings. And residents say the cable television company runs annoyingly frequent public-service-style announcements on the benefits of **nuclear** power.

Despite all that, the Tokaimura **nuclear**-fuel processing accident seems to have awakened the deep Japanese allergy to things **nuclear**, born after the United States dropped two atomic bombs on the country in 1945.

And many have put their foot down and said no to the new program, seizing on studies by scientists in France, which uses MOX fuel in a limited way, and in the United States, which does not, that have shown that the fuels are more unstable during burning than the plain uranium fuels that they are intended to replace.

In the end, Mayor Imai, who has been a strong supporter of **nuclear** power throughout his career, had no choice but to oppose the new fuel, at least for now. The shock from the British falsification scandal, coming on top of the Tokaimura accident, simply made it politically impossible to give his approval.

Announcing his turnabout, Mr. Imai spoke bitterly, saying he felt betrayed by the industry experts who had campaigned for his approval of MOX. [On Jan. 12, the Kansai said that it would return a shipload of recycled plutonium fuel to British **Nuclear** Fuels, the company where inspection figures had been altered, Agence France-Presse reported.]

ART
Photos: In Takahama, a village with four **nuclear** plants, Shizuko Abe, second from left, leads protest on a new fuel. (Stuart Isett/Corbis Sygma, for The New York Times)(pg. A1); Environmental advocates marching in October at the government's **nuclear** agency in Tokyo. Their sign said: "Is this Chernobyl? Protesting the **nuclear** accident in Tokaimura." The town was partly evacuated. (Reuters)(pg. A14) Map of Japan highlighting Tokaimura: Workers set off a chain reaction at a processing plant in Tokaimura. (pg. A14)

21 juillet 2000 : arrêt d'un réacteur après une fuite consécutive à un tremblement de terre

Japanese Nuclear Plant Shut Because Of Earthquake

Dow Jones International News

DJI

TOKYO (AP)--Several earthquakes shook the Tokyo area Friday, including a predawn 6.1-magnitude earthquake that prompted the shutdown of a **nuclear** reactor as a cautionary measure. There were no immediate reports of injuries.

A reactor at the **Fukushima nuclear** power plant in northeastern Japan was shut down after a leak was detected in a tank where steam used to power the turbines is turned back into water.

There was no danger of any radioactivity leaking, said Yoshimi Hitosugi, spokesman for Tokyo Electric Power Co., which runs the plant about 150 miles northeast of Tokyo.

The magnitude 6.1 quake, which hit at 3:39 a.m., was centered off the coast of Ibaraki state, 70 miles northeast of Tokyo, the Meteorological Agency said.

It shook buildings for several seconds in Tokyo.

Shigeru Seki, an Ibaraki police spokesman, said some trains in the Tokyo area were stopped to check for track damage.

Another quake with a preliminary magnitude of 5.5 struck at 2:16 p.m. It was centered about 25 miles under the seabed in the Pacific Ocean, some 90 miles southeast of Tokyo, the agency said.

Earthquakes that have been rattling the Izu island chain near Tokyo continued Friday. About 1,000 earthquakes were detected by the agency Friday, including quakes of 4.8 magnitude and 3.3 magnitude.

There were no reports of injuries or damage on the islands.

Japan is one of the most earthquake-prone countries in the world.

JAPON SEISME

CP

21 juillet 2000

La Presse Canadienne

SF**LA** Français

Japon: arrêt d'un réacteur **nucléaire** en raison des séismes

TOKYO (AP) -- La vague de secousses sismiques qui touche actuellement le Japon, et notamment la région de Tokyo, a amené les autorités à arrêter le réacteur d'une centrale **nucléaire**, par mesure de précaution.

Un fort séisme d'une magnitude préliminaire de 6,1 avait déjà secoué les environs de la capitale nippone tôt vendredi (jeudi soir à Paris), coupant l'alimentation en eau d'une vingtaine d'habitations et interrompant le trafic ferroviaire.

Le réacteur de la centrale de **Fukushima**, au nord-est du pays, a été arrêté après la détection d'une fuite dans une cuve de condensation de la vapeur utilisée pour entraîner les turbines.

Il n'y aucun danger de radioactivité à la suite de cet incident, a affirmé Yoshimi Hitosugi, le porte-parole de la Compagnie d'électricté de Tokyo, qui dirige cette centrale située à environ 240 kilomètres au nord-est de la capitale.

Par ailleurs, l'épicentre du séisme de 6,1, qui s'est produit vendredi à 3H33 (18H39 GMT jeudi, 20H39 à Paris) était situé au large des côtes de la préfecture d'Ibaraki, à environ 112km au nord-est

de Tokyo, selon l'Agence météorologique. Il a ébranlé pendant plusieurs secondes les bâtiments de la mégapole. AP

Fukushima nuclear power reactor being shut down after quake.

21 juillet 2000

BBC Monitoring Asia Pacific - Political

BBCAPP**NGC** BBC**GC** CTGBBC

Text of report in English by Japanese news agency Kyodo

Sendai, 21st July: Tokyo Electric Power Co (TEPCO) announced Friday [21st July] it has started to manually shut down a reactor at its **nuclear** power plant in **Fukushima** Prefecture due to an increase in waste gas, possibly caused by an earthquake that jolted extensive areas of eastern Japan early in the day.

TEPCO started to shut down the No 6 reactor at the **Fukushima** No 1 plant on the Pacific coast, some 250 km north of Tokyo, at 1500 [all times local] Friday.

The shutdown is necessary to determine the cause of a rapid increase in radioactive exhaust emitted by the reactor, detected shortly after the magnitude 6.1 quake struck at 0339, it said.

No radioactivity was leaked outside the plant, and operations at the reactor were otherwise normal, it said.

The 1.1m-kW reactor, the largest among the six reactors at the plant, will be completely shut down by around 2200 Friday, the company said.

TEPCO suspects the earthquake loosened pipe joints, sending air into the system that removes radioactive substances from waste gas generated at the No 6 reactor, it said.

The six reactors at the **Fukushima** No 1 plant have a combined generating capacity of 4.69m kW.

UPDATE 1-Japan nuke plant to shut for check, no leak.

21 juillet 2000

Reuters News

LBA

TOKYO, July 21 (Reuters) - Japan's largest power utility said it would shut one of its **nuclear** power plants to investigate a rise in waste gas following an earthquake that jolted areas near Tokyo on Friday morning.

The **nuclear** station in **Fukushima** prefecture, about 250 km (155 miles) northeast of Tokyo, was put under enhanced surveillance after waste gas began rising, Tokyo Electric Power Co Inc (TEPCO) said.

TEPCO officials said there was no radioactive leak, and the generator's output levels were unchanged after the tremor, but as a precaution, output at the 1.1-gigawatt reactor was lowered from 3 p.m. (0600 GMT).

The reactor was expected to be fully shut down by 10 p.m. (1300 GMT).

"The shutdown was decided in order to check and determine the cause of the incident, and there was no radiation leak," a TEPCO spokesman said.

An inflow of air into the system through some crack or disjointed parts was suspected to have caused the rise in waste gas - fumes released from a **nuclear** generator - at the No.6 reactor at the at **Fukushima** No.1 station.

"It is a possibility but we do not know if it is actually the case, that's why we are stopping (the reactor) to investigate," the spokesman added, referring to the possibility that the quake caused a crack in the station.

The tremor at 3:39 a.m. (1839 GMT Thursday) was measured at 6.1 on the Richter scale with its focus about 50 km (30 miles) under the seabed off the coasts of Ibaraki Prefecture, some 100 km (62.5 miles) northeast of Tokyo.

Japan has 51 commercial **nuclear** reactors providing about 30 percent of the country's electricity needs.

Public anger after several major accidents at **nuclear** facilities over the past five years, including Japan's worst-ever accident in September that killed two uranium plant workers, has forced delays in the government's **nuclear** programme.

Radioactive Water Leaks in Japan

23 juillet 2000

AP Online

ASP

TOKYO (AP) - A small amount of radioactive water was found to have leaked at a **nuclear** power plant in northeastern Japan after officials shut down one of its reactors because of an oil leak, the plant's operator said Monday.

There was no danger, however, of any radiation escaping outside the **Fukushima** No. 1 **nuclear** power plant in Okuma, said Yoshimi Hitosugi, spokesman of Tokyo Electric Power Co.

Okuma, a town located on the Pacific Coast in **Fukushima** prefecture (state), is 150 miles northeast of Tokyo.

Hitosugi said plant officials found about 39 gallons of radioactive water that had leaked near the No. 2 reactor at around 10:20 p.m. Sunday, about an hour after the No. 2 reactor was manually shut down.

Officials had noticed an alarm indicating the lowering of oil levels inside the tank in the turbine facility, Hitosugi said. The oil leak was stopped after officials closed the valve supplying oil to control the turbine, he said.

Plant officials were still investigating the cause of the leakage of oil and radioactive water, Hitosugi said.

On Friday, the No. 6 reactor at the **Fukushima nuclear** plant was shut down after a leak of waste gas was detected in a tank where steam used to power the turbines was turned back into water.

No leak of radioactive material was reported at the No. 6 reactor, which was shut down as a cautionary measure after a 6.1 magnitude earthquake struck in the Pacific Ocean off the coast of eastern Japan.

The plant has six reactors.

Japan has an extensive **nuclear** power program, as the resource-poor nation depends on **nuclear** energy for a third of its electricity.

Public faith was shaken, however, by the nation's worst **nuclear** accident on Sept. 30 last year at a fuel-processing plant in Tokaimura, 70 miles northeast of Tokyo, that took the lives of two workers and seriously injured a third.

Dozens of people are believed to have been exposed to less harmful radiation in the accident, which set off an uncontrolled atomic reaction.

24 juillet 2000 : fermeture du réacteur n°2 en raison d'une fuite de pétrole dans une turbine

Japon/Nucléaire-Un 2e réacteur fermé à la centrale de Fukushima.

Reuters - Les actualités en français

REUTFR**LA** Français

TOKYO, 24 juillet (Reuters) - La première compagnie japonaise d'électricité a annoncé lundi la fermeture d'un second réacteur de la centrale **nucléaire** de **Fukushima**, à 250 km de Tokyo, à la suite d'une fuite de pétrole près d'une turbine.

Le pétrole sert à contrôler la pression dans cette turbine.

Tepco (Tokyo Electric Power Co) a fermé le réacteur n°2, d'une puissance de 784 mégawatts, dimanche soir, et a par la suite détecté de faibles radiations dans une flaque de 150 litres d'eau apparue au-dessous d'un réseau de barres de contrôle.

Vendredi, Tepco avait fermé un premier réacteur **nucléaire** de la même centrale en raison d'une augmentation de la concentration de gaz constatée à la suite d'un séisme survenu dans la journée.

Aucune radiation n'a été libérée dans l'environnement extérieur à la centrale après l'incident constaté dimanche, précise un porte-parole de Tepco.

Le Japon compte 51 réacteurs nucléaires disséminés dans des centrales civiles qui, au total, produisent 30% des besoins du pays en électricité. La colère de l'opinion publique à la suite de plusieurs accidents de taille dans des centrales nucléaires ces cinq dernières années - dont le pire accident **nucléaire** du pays en septembre dernier, qui a tué deux ouvriers - a entraîné des retards dans le programme **nucléaire** du gouvernement. /EF.

24 juillet 2000 : le gouvernement japonais reconnaît l'inquiétude du public en raison des récents accidents nucléaires

Japan admits public fears over nuclear energy amid fresh incident by Kiriko Nishiyama ATTENTION - RECASTS with government report ///

Agence France-Presse

AFPR

TOKYO, July 24 (AFP) - Japan's authorities admitted high levels of public anxiety about their accident-prone **nuclear** energy programme Monday, as one plant suffered its second mishap in three days.

The programme remained crucial to supplying the resource-poor nation's electricity needs, the Atomic Energy Commission said in a draft report on Japan's long-term **nuclear** power policy.

But it acknowledged "the sense of mistrust is growing along with fears about **nuclear** power, as a result of recent **nuclear** accidents as well as cover-ups and falsified reports related to these."

"Based on the premise that we cannot completely rule out the possibility of accidents, emergency measures have to be prepared to minimise damage to lives and the health of residents in case of an accident," the report added.

Concerns over **nuclear** power have escalated in Japan since the country's worst-ever **nuclear** disaster last September, which was also classified as the world's worst since Chernobyl in 1986.

A critical reaction at a uranium processing plant in Tokaimura, 120 kilometers (70 miles) northeast of Tokyo, killed two plant workers and exposed 439 people to radiation.

In the accident's fallout, the government said in March that plans to build 16-20 new **nuclear** power plants by March 2011 would be abandoned.

In the latest incident, energy company officials launched a probe after a radioactive oil leak within a **nuclear** power plant forced operators to shut down a reactor on Sunday.

Another reactor at the same **Fukushima** No.1 **nuclear** power plant, 200 kilometres north of Tokyo, was shut down on Friday after a strong earthquake measuring 6.1 on the open-ended Richter scale rocked the region.

The oil leak was confined to within the plant in the town of Okuma and "we consider there is no danger to the surrounding environment", said Tokyo Electric Power Co. Inc. (TEPCO) spokesman Ichiro Kudo.

About 150 liters (39 gallons) of radioactive oil had collected from a drip out of a cracked turbine valve, TEPCO said. Operators had shut down the No.6 reactor manually by 9:17 pm (12:17 GMT) Sunday.

"We detected radiation, but the level was not high enough to pose a threat to people," Kudo said.

The No.2 reactor was still shut after Friday's powerful quake provoked fears that control systems monitoring exhausts may have been damaged. But there was no radiation leak and no danger, officials said.

Japan relies on 51 reactors to produce about one-third of its electricity. It is the only nation still developing **nuclear** fast- breeder reactors after France closed its Superphenix reactor in 1997.

The programme, however, has been mothballed since December 1995, when secondary cooling water leaked from the prototype fast-breeder plant at Monju, 350 kilometres west of Tokyo, causing a fire within the plant.

"We hope to resume operations at the plant at an early stage while gaining understanding from local communities and from society at large," said the Atomic Energy Commission report.

Heightening public mistrust was an embarrassing dispute between Japan and Britain, finally resolved on July 11, over a consignment of **nuclear** fuel which arrived in Japan last year with faked quality control data.

London eventually capitulated to Japanese demands that it take back the fuel sent by British **Nuclear** Fuels Ltd.

25 juillet 2000 : un troisième réacteur fermé en raison d'une augmentation anormale de l'iode

Japon - Fermeture d'un troisième réacteur nucléaire à Fukushima.

Reuters - Les actualités en français

REUTFR**LA** Français

TOKYO, 25 juillet (Reuters) - La compagnie Tokyo Electric Power (Tepco), première compagnie japonaise d'électricité, a annoncé mardi avoir fermé un réacteur **nucléaire** de 1,1 gigawatt sur une des deux centrales de **Fukushima**, à 250 km au nord-est de Tokyo, après avoir détecté une augmentation anormale d'iode dans l'eau du réacteur.

Tepco a déclaré que le taux d'iode dans ce réacteur de **Fukushima** 2 restait conforme aux normes

de sécurité mais que la fermeture avait été décidée afin de comprendre les raisons d'une telle augmentation.

Il s'agit du troisième incident signalé depuis quelques jours à **Fukushima**. Tepco a fermé deux réacteurs sur la centrale n°1 vendredi puis dimanche, le premier en raison d'une hausse anormale de la concentration de gaz à la suite d'un séisme, le second à la suite d'une fuite de pétrole près d'une turbine.

"Les incidents ne sont pas comparables et ne sont probablement pas liés", a déclaré un porte-parole de la compagnie.

Le Japon compte 51 réacteurs nucléaires qui, au total, produisent 30% des besoins du pays en électricité.

L'opinion publique est particulièrement sensible aux problèmes nucléaires depuis le pire accident **nucléaire** du pays survenu en septembre dernier, qui a tué deux ouvriers. /JSB.

Nouvel incident dans une centrale nucléaire.

25 juillet 2000

L'Agéfi

AGFIF**LA** Français

JAPON - Les responsables japonais de l'énergie ont ouvert hier une enquête sur une fuite radioactive dans une centrale **nucléaire** du nord de Tokyo. Un incident qui a contraint les techniciens à fermer un réacteur. Un autre réacteur de la même centrale, **Fukushima** No 1, située à 200 kilomètres au nord de la capitale, avait dû être fermé vendredi à la suite d'un séisme de force 6,1 sur l'échelle de Richter qui avait secoué la région. Nous considérons qu'il n'existe aucun danger pour l'environnement, a déclaré lundi Ichiro Kudo, porte-parole de l'entreprise Tokyo Electric Power Co. Il a expliqué que la fuite était limitée à l'intérieur de la centrale, qui se trouve dans la localité de Okuma.

2 août 2000 : arrêt du réacteur n°6 en raison de la rupture d'une canalisation, abîmée lors du dernier tremblement de terre

Pipe rupture caused Fukushima nuclear reactor shutdown

Japan Economic Newswire

KYODO

FUKUSHIMA, Japan, Aug. 2 --

The earthquake-related rupture of a corroded pipe and subsequent increase in waste gas led to last month's shutdown of a reactor at one of Tokyo Electric Power Co.'s (TEPCO) **nuclear** power plants in **Fukushima** Prefecture, northeastern Japan, the company confirmed Wednesday.

TEPCO officials said they found that a small pipe at the No. 6 reactor of the **Fukushima** No. 1 plant on the Pacific coast was broken in a magnitude 6.1 quake July 21 and air inflow from the pipe's cracks rapidly increased radioactive gas emissions from the reactor.

The pipe had previously been damaged by repeated heat and strain.

No radioactivity leaked outside the plant after TEPCO manually shut down the reactor following the quake, which jolted extensive areas of eastern Japan.

The ruptured pipe, measuring 34 millimeters in outside diameter and attached to a safety valve, suffered metal fatigue as steam repeatedly passed through it, according to the Ministry of International Trade and Industry.

The officials also examined pipe joints at five other reactors in the plant and detected deterioration, although those pipes had no cracks.

TEPCO officials said they are planning to remove the corroded pipe at the No. 6 reactor and a similar pipe at the No. 2 reactor.

It is rare for a reactor pipe to rupture during a quake, according to TEPCO.

30 septembre 2000 : chronologie des principaux accidents nucléaires au Japon

Chronology of major nuclear accidents in Japan

Agence France-Presse

AFPR

TOKYO, Sept 30 (AFP) - Japan on Saturday marked the first anniversary of the Tokaimura uranium plant accident, the world's worst **nuclear** disaster since Chernobyl in 1986.

The following is a list of the most recent **nuclear** accidents in Japan:

December 1995: The Monju fast-breeder reactor, in western Japan, is shut down after a massive sodium leak. The reactor remains shut to date with the fast-breeder program frozen.

March 1997: 37 people are exposed to radiation following a fire at another **nuclear** reprocessing

plant in Tokaimura. The plant remains closed.

April 1997: Tritium leak at Fugen advanced thermal reactor in western Japan exposes 11 workers to low-level radiation.

August 1997: It is revealed that 2,000 drums of **nuclear** waste have been leaking over the past 30 years, again in Tokaimura.

July 1999: More than 80 tonnes of primary cooling water leak in one of the country's worst spills, in western Japan.

September 30, 1999: Three workers spark a critical reaction at the uranium reprocessing plant in Tokaimura. Two of the workers die in the months after the accident, which exposed 439 residents to radiation.

July 25, 2000: A **nuclear** reactor in **Fukushima**, north of Tokyo, is shut down after a suspected interior radioactive leak, the third closure in the area after a big earthquake struck five days earlier.

jit/ben

31 octobre 2000 : Fukushima devrait être la première centrale à utiliser du MOX

Fukushima likely Japan's 1st plant to use MOX fuel

Kyodo News

KYODO

FUKUSHIMA, Japan, Nov. 1 --

A **Fukushima nuclear** power plant operated by Tokyo Electric Power Co. (TEPCO) is likely to be Japan's first plant to use plutonium-uranium mixed oxide (MOX) fuel in a new type of power generation, TEPCO sources said Tuesday.

TEPCO plans to use the fuel next February in its No. 3 reactor at the **Fukushima** No. 1 plant in Okuma, some 200 kilometers northeast of Tokyo, as part of the so-called "pluthermal" project, the sources said.

Pluthermal is a word coined to mean the use of MOX fuel in a thermal reactor.

The fuel will be taken to the 24-year-old reactor during a regular check which will begin in February, two months earlier than initially planned.

The central government issued a safety certificate for the fuel, imported from Belgium, in August.

Details of the plan will possibly be made public in town meetings planned to be jointly held by TEPCO and the Ministry of International Trade and Ministry, which oversees **nuclear**-related business.

9 février 2001 : TEPCO persiste à vouloir construire de nouveaux réacteurs

TEPCO Pres. Says to Continue Nuclear Plant Plans

Jiji Press English News Service

JIJI

Tokyo, Feb. 9 (Jiji Press) - Tokyo Electric Power Co. will continue its **nuclear** power plant construction projects despite its policy of limiting expansion of power generating capacity, President Nobuya Minami said Friday.

Nuclear plant projects will not be affected by its plan to freeze power plant construction for three to five years, Minami said.

His comments reversed remarks made by Vice President Takeshi Taneichi, who announced the plan at a press conference on Thursday. Taneichi said that **nuclear** as well as thermal and hydroelectric power plants would be included in the plan.

Officials of the government of **Fukushima** Prefecture, where Tokyo Electric is planning to build two **nuclear** reactors, expressed displeasure after the plan for construction freeze was announced, citing the lack of information from the company.

26 février 2001 : le gouverneur de Fukushima refuse d'autoriser l'utilisation de MOX

Fukushima governor rejects plutonium mixed oxide fuel for nuclear reactor.

BBC Monitoring Asia Pacific - Political

BBCAPP**NGC** BBC**GC** CTGBBC

Text of report in English by Japanese news agency Kyodo

Fukushima, Japan, 26 February: **Fukushima** Governor Eisaku Sato told the prefectural assembly on Monday [26 February] that the prefecture will not agree to the use of uranium and plutonium mixed oxide fuel (Mox) at the **Fukushima** No 1 **nuclear** power plant.

Sato said, "It is unlikely Mox fuel will be delivered and used for the time being."

Commenting on the governor's statement, Tokyo Electric Power Co (Tepco), which operates the power plant, said the company "will conduct the plan with the understanding of local residents."

Sato's statement is likely to affect Tepco's plan to start using Mox fuel in the No 3 reactor of the **nuclear** power plant from April. This will also affect the national policy on the **nuclear** fuel cycle.

Sato has maintained a cautious stance on acceptance of Mox fuel, on the grounds that the people of the prefecture are against it.

Tepco announced earlier this month it had decided to suspend construction of new power plants for three to five years.

After Tepco's announcement, Sato said it is necessary for the government to review its energy policy, including the use of Mox fuel. "We have to take time for about a year to decide what to do with it," he said.

Mox, a pelletized mixture of uranium dioxide and plutonium dioxide, is designed to be burned in light-water reactors in a practice known as plutonium thermal use. Plutonium is obtained by reprocessing the spent **nuclear** fuel from **nuclear** power plants.

Fast-breeder reactors were once expected to carry the main thrust of Japan's **nuclear** fuel cycle policy. However, after the 1995 fire at the prototype fast-breeder reactor Monju in Tsuruga, Fukui Prefecture, the government placed the plutonium thermal use at the centre of the **nuclear** fuel cycle policy.

Tepco is also planning to start using Mox fuel at the Kashiwazaki-Kariwa **nuclear** plant in Niigata Prefecture. Kansai Electric Power Co. intends to do the same at its Takahama **nuclear** plant in Fukui Prefecture. Both plants are on the coast of Sea of Japan.

Source: Kyodo News Service, Tokyo, in English 0830 gmt 26 Feb 01.

26 février 2001 : TEPCO annonce un gel de ses constructions de nouveaux réacteurs. Colère des collectivités locales

FOCUS: TEPCO's freeze plan draws anger, criticism.

Japan Energy Scan

JPES

TOKYO, Feb. 21 Kyodo

When Tokyo Electric Power Co. (TEPCO) announced earlier this month they were planning a three- to five-year freeze on construction of new power facilities, they found themselves on the receiving end of harsh criticism and anger from government authorities.

The announcement came Feb. 8. TEPCO said the freeze would affect 27 planned power generators at 12 power plants, including four **nuclear** power reactors in **Fukushima** and Aomori prefectures.

The criticism from officials in central and prefectural governments was fast and furious. For the local authorities, the plants mean jobs and tax revenues. Tokyo, meanwhile, believes the freeze could cause a serious disruption in the government's national energy and environmental policies.

In bid to at least partially calm such fears, TEPCO President Nobuya Minami held an emergency news conference a day after the announcement, in which he promised that the four **nuclear** plants would go ahead as planned.

Much of the anger directed at TEPCO has come from **Fukushima** Prefecture, the location of several of the facilities which could be affected by the freeze.

After hearing the Feb. 8 announcement, prefectural officials responded with a threat of their own. They hinted of a review over a TEPCO plan to start using mixed-oxide (MOX) fuel in a reactor of the **Fukushima** No. 1 **Nuclear** Power Plant in the prefecture. The MOX project, scheduled to get under way from April, is not directly related to TEPCO's planned freeze.

The following week, **Fukushima** Gov. Eisaku Sato accused the utility of creating "a situation that not only flew in the face of the understanding of citizens of Japan but also among people in the towns of Hirono and Futaba (in **Fukushima** Prefecture where more thermal and **nuclear** power plants have been planned.)"

Tax revenue is a key concern for **Fukushima** Prefecture. One of the facilities TEPCO is considering putting on hold is Unit 5 at the Hirono power plant, scheduled to go into operation from August 2002. Should the project become stalled, the town office would stand to lose at least a billion yen of tax revenue, forcing the town to revise its fiscal planning.

TEPCO's announcement came on the backdrop of an energy market suffering from sluggish demand and undergoing liberalization. Power companies saddled with excess facilities may find it difficult to survive.

TEPCO's freeze plan was not its first. The utility took the same step last year for 17 power stations at six plants.

"The talks on the (plants') postponement had a huge impact on the local areas concerned and the discussions approached a limit," a TEPCO spokesman said. "By using a strong term like 'freeze,' we wanted to make local people appreciate the utility's difficult situation."

That strategy, however, appeared to have backfired.

In Tokyo, meanwhile, central government officials complain that news of TEPCO's planned freeze came as an unexpected shock.

"The announcement was different from what they had been telling us, and it seemed to come right out of the blue," said a senior official of the Natural Resources and Energy Agency at the Ministry of Economy, Trade and Industry.

Every March, the agency coordinates with power companies before drawing up the nation's energy supply plans for the next decade.

Another point of friction between TEPCO and the central government is over the construction of a **nuclear** plant in the village of Higashi-dori in Aomori Prefecture. TEPCO had wanted to put off its construction.

However, the power industry has committed itself to cut its carbon dioxide output to 20% of 1990's level, on condition that it constructs an additional 13 **nuclear** power reactors.

The goal is in line with the fiscal 2010 target for Japan to reduce greenhouse gas emissions.

The ministry is backing the power industry's plan because a freeze on the Higashi-dori plant, scheduled to go into operation from fiscal 2010, would have a huge impact on the plan.

A freeze could even cause Japan to lose face in the world community should it result in the country

failing to fulfill its commitment to cut the harmful gases.

Yet on the other hand, a TEPCO executive said that going ahead with the plant would require large amounts of funds, possibly leading to a "management crisis" at his company.

26 mars 2001 : les anti-nuclaires déboutés de leurs poursuites judiciaires visant à interdire l'usage du MOX

Court dismisses civic groups' request to halt MOX fuel use.

Japan Energy Scan

JPES

FUKUSHIMA, Japan, March 23 Kyodo

The **Fukushima** District Court dismissed Friday a request by civic groups in Tokyo and **Fukushima** Prefecture for a temporary injunction against the use of plutonium-uranium mixed oxide (MOX) fuel at a Tokyo Electric Power Co. (TEPCO) **nuclear** power plant in the prefecture.

Presiding Judge Hiroyasu Ikushima said, "Checks on the fuel are reliable enough and there is no question of malpractice with regard to the checks. There is no need to consider the dangerousness of the fuel."

A total of 864 people filed the request, which asked the court to halt the use of MOX fuel at the No. 3 reactor of TEPCO's No. 1 **Fukushima nuclear** power plant. They argued that a report compiled by the company shows that checks conducted by the Belgian maker of the fuel, Belgonucleaire, were unreliable.

The civic groups questioned TEPCO's assertion that the Belgian maker found no defective products in tests, saying such a result is statistically impossible. They added that operating the reactor with defective MOX fuel pellets would pose a serious risk.

The fuel was shipped to the reactor in September 1999 to be used in TEPCO's "pluthermal" **nuclear** power program.

However, in the same month it was revealed that another fuel maker, British **Nuclear** Fuels PLC, had falsified data on a series of safety checks on MOX fuel shipped to a Kansai Electric Power Co. **nuclear** plant in Fukui Prefecture, casting doubt on TEPCO's fuel.

TEPCO told the then Ministry of International Trade and Industry in February last year that the Belgian **nuclear** fuel manufacturer conducted proper quality-control checks on the MOX fuel shipped to Japan, saying no defective products were found in the tests.

Last month, **Fukushima** Gov. Eisaku Sato announced the prefecture would not agree to the use of MOX fuel at the **Fukushima** No. 1 **nuclear** power plant on the grounds that **Fukushima** residents are against it.

Sato's announcement is likely to affect TEPCO's plans to start using MOX fuel in the reactor in

April as well as Japan's national policy on its **nuclear** fuel cycle.

2 avril 2001 TEPCO reporte l'utilisation du MOX dans ses centrales

TEPCO to delay use of MOX fuel at Fukushima nuclear plant.

Japan Energy Scan

JPES

TOKYO, March 29 Kyodo

Tokyo Electric Power Co. (TEPCO) has decided to postpone the launch of plutonium-uranium mixed oxide (MOX) fuel at its **nuclear** power plant in **Fukushima** Prefecture, northeastern Japan because of opposition from the governor, company sources said Thursday.

The **Fukushima** No. 1 **nuclear** power plant was scheduled to become the first **nuclear** plant to use MOX fuel in April. However, **Fukushima** Gov. Eisaku Sato said last month that the prefecture will not allow the use of MOX fuel on the grounds that residents are against it.

MOX, a pellet mixture of uranium dioxide and plutonium dioxide, is designed to be burned in light-water reactors, a process known as plutonium thermal use. Plutonium is obtained by reprocessing spent **nuclear** fuel from **nuclear** power plants.

Sato has said the government must review its energy policy, including the use of MOX fuel.

TEPCO is also planning to start using MOX fuel at its Kashiwazaki-Kariwa **nuclear** plant in Niigata Prefecture, and Kansai Electric Power Co. intends to do the same at its Takahama **nuclear** plant in Fukui. Both plants are on the Sea of Japan.

The electric power industry plans to carry out the "pluthermal" project, which uses MOX fuel in a thermal reactor, at 16 to 18 reactors by 2010. Originally, the project was scheduled to be launched in 1999.

3 avril 2001 : un maire demande des comptes au gouverneur de Fukushima qui a interdit l'usage du MOX

Kashiwazaki mayor seeks Fukushima's explanation of MOX use

Kyodo News

KYODO

NIIGATA, Japan, April 3 --

The mayor of Kashiwazaki in Niigata Prefecture, which hosts a **nuclear** power plant operated by Tokyo Electric Power Co. (TEPCO), demanded Tuesday that **Fukushima** Prefecture explain its plan to reject the use of plutonium-uranium mixed oxide (MOX) fuel at a TEPCO **nuclear** plant there.

Kashiwazaki Mayor Masazumi Saikawa said **Fukushima** Gov. Eisaku Sato should provide a full explanation as soon as possible of his plan not to allow the use of MOX fuel, as it could affect state **nuclear** policy.

TEPCO's **Fukushima** No. 1 **nuclear** power plant was scheduled to become the first **nuclear** plant to use MOX fuel in Japan in April. However, Sato said in February that the northeastern Japan prefecture will not allow MOX use at the plant for the time being on the grounds that residents are against it.

Sato's rejection is also believed to be connected with TEPCO's announcement in early February to freeze its plan to build new reactors at a thermal power plant in the town of Hirono in the prefecture, which would result in loss of tax revenues for the local municipality.

MOX fuel has already been shipped to TEPCO's Kashiwazaki-Kariwa plant on the Sea of Japan, but Niigata Prefecture is reluctant to host the nation's first "pluthermal" process involving MOX fuel.

The process consists of using MOX fuel -- made by mixing uranium with plutonium chemically extracted from spent **nuclear** fuel -- in a thermal reactor.

"If **Fukushima** is calling for a major change (in **nuclear** policy) without offering sufficient explanation, we will be in trouble," Saikawa said.

Saikawa also criticized Sato's plan of taking time to study a **nuclear** fuel cycle policy.

The electric power industry plans to carry out the "pluthermal" project in 16 to 18 reactors by 2010. Originally, the project was scheduled to be launched in 1999.

15 mai 2001 : arrêt planifié du réacteur n°6 après la découverte de fuites radioactives

TEPCO to close nuke reactor to check malfunction.

Reuters News

LBA

TOKYO, May 15 (Reuters) - Tokyo Electric Power Co Inc (TEPCO) said on Tuesday it will shut down a 1.1 gigawatt (gW) **nuclear** reactor in northern Japan to check on a higher-than-usual reading of iodine in the cooling water.

A TEPCO spokesman said a small amount of radiation could have leaked inside the reactor, but that none had escaped the **Fukushima** No 1 power plant's No 6 **nuclear** reactor.

"We will manually shut down the reactor from Wednesday to check the malfunction because there could be a small hole in a pipe covering the fuel rods," he said.

Japan's largest power utility is expected to suspend operations at the reactor for about 17 days, he said.

Separately, TEPCO said it restarted on Saturday operations at another **nuclear** reactor that had been closed due to a technical problem in a unit that supplies water to the reactor.

Japan has 51 commercial **nuclear** reactors, which provide about one-third of the nation's power.

The industry has been criticised after a series of accidents, including Japan's worst-ever at a uranium reprocessing plant in Tokaimura, north of Tokyo, in 1999 that killed two workers.

24 août 2001 : le METI ordonne la vérification de 28 réacteurs

Ministry to order inspection of 28 reactors after crack

Kyodo News

KYODO

TOKYO, Aug. 24 --

The Ministry of Economy, Trade and Industry will order the inspection of 28 boiling water reactors used to generate power by six companies in Japan, following the discovery of a crack in a fuel unit of the reactor core at a power station in **Fukushima** Prefecture in early July, ministry sources said Friday.

On July 6, **nuclear** safety officials in **Fukushima** Prefecture announced the discovery of a crack in a wall, called a shroud, that covers fuel within the No. 3 reactor of Tokyo Electric Power Co.'s **Fukushima** Daini **nuclear** power station.

Following an investigation by Tokyo Electric Power, the ministry's **nuclear** safety division assumed the damage is so-called stress corrosion cracking, common to all boiling water reactors like one at the **Fukushima** power station.

Since the reactor in question is made of stainless metal considered resistant to such cracking, the ministry's **nuclear** safety officials believe the crack could have been due to the way the shroud was manufactured and inspection at other **nuclear** power stations is thus necessary.

Tokyo Electric Power said despite the crack, the shroud is still strong. But for extra safety, a step to reinforce the shroud will be taken.

The six companies are Tokyo Electric Power, Tohoku Electric Power Co., Chubu Electric Power Co., Hokuriku Electric Power Co., Chugoku Electric Power Co. and Japan Atomic Power Co.

30 août 2001 : installation de quatre barres de liaisons pour réparer une fissure sur le réacteur 3

FUKUSHIMA II-3 INSTALLS TIE RODS AFTER DEEP SHROUD CRACK CONFIRMED

BY Mark Hibbs, Bonn; Ann MacLachlan, Paris

Nucleonics Week

NUC

1

Vol. 42, No. 35

Tokyo Electric Power Co. (Tepco) is installing four tie rods at the top of the core shroud of the **Fukushima** II-3 BWR, as a preventive measure to address surface stress corrosion cracking (SCC) which was confirmed in the shroud in early July, company officials told Nucleonics Week Aug. 28.

Officials at the Ministry of Trade, Economy, & Industry (METI), Japan's regulator, said that a deep circumferential crack had been confirmed in the lower part of the shroud but that metallurgical investigations indicated the crack is not growing. The SCC was detected in the so-called H6A weld which joins the bottom of the shroud with the core support piece (CSP), officials said. H6A, a shop weld, had been machined, significantly increasing its vulnerability to SCC, Japanese experts have concluded.

At Tepco, METI, and Japanese vendor firms, the confirmation of SCC in the **Fukushima** II-3 shroud in July prompted initial alarm because it was the first incidence of SCC in Japan found in 316L, a low-carbon steel which Japanese utilities had assured METI was immune from SCC, officials at METI said.

In reaction, METI has ordered inspections of shrouds at all 27 other Japanese BWRs. Japanese officials said that the next routinely scheduled refueling and inspection outages into 2002 at all BWRs will be extended for between several days and two weeks to inspect the shrouds for signs of SCC in 316L.

A Japanese safety expert said that in the case of the new plants Kashiwazaki-6 and -7, and at BWRs whose core shrouds were already replaced, either weld surfaces were polished to attenuate surface stress or the shroud ring has no welding line. Industry and experts therefore see a low probability of SCC being found at those plants, he said.

At the remaining units, it's hard to predict the probability of cracks being found, this expert said, because tests done to reproduce the **Fukushima** II-3 crack indicate that crack initiation is highly dependent on machining conditions. Those conditions could be different during fabrication of shroud rings at each plant as well as for the individual plant environment, he said, so the possibility of finding further SCC ``will be rather random."

Sources said Tepco knew about the crack finding at **Fukushima** II-3 for at least a year prior to

involving METI regulators. ``This was not a new development for Tepco but it was considered to be very sensitive'' because of the implications for 316L, one industry source familiar with the case said.

Replacement With 316L

Japanese officials said that Tepco and regulators had until now believed that 316L would not be affected by SCC. In shroud replacements, equipment made of 304SS and 304L--the core shroud, top guide, core plate, the core spray pipe, and the jet pumps--was all replaced with equipment made with 316L. Tepco began making core shroud repairs at older **Fukushima** units in 1997 (NW, 30 July '98, 1).

A Japanese metallurgist said 316L is a widely used stainless steel with maximum carbon of 0.03% and a high nickel and molybdenum content. The alloy has been used in some **nuclear** applications because of its superior weldability, the expert at Kobe Steel Co. said. ``There shouldn't be any corrosion finds, but there may be in particular cases and SCC can't be excluded,'' he said.

METI officials said that, despite previous blanket assertions by Japanese utilities that SCC would not occur in 316L, a review of technical data during the last several months has made clear that SCC is possible depending on variables including flux, oxygenation, and electro-chemical potential (ECP). ``It's true that 316 is generally superior, but if a crack is initiated and tensile stress exists, it is also subject to SCC,'' one safety expert said.

Officials told Nucleonics Week that Tepco and METI believe the root cause of the SCC in the H6A weld lies in the machining done to smooth and finish its surface. They said that action hardened the weld and substantially increased its vulnerability to SCC. Because the weld's treatment was exceptional, Japanese officials said, further SCC in the shroud is not expected.

Tepco said four tie rods are being installed, at 90-degree intervals, at the top of the shroud as a preventive measure. Installation of four to 10 tie rods has been standard practice in shroud repair or reinforcing in the U.S., experts said. Tepco officials said the backfit should be sufficient for **Fukushima** II-3, since studies indicate the crack is not growing. The crack will continue to be monitored during inspections.

BWR experts said that while the **Fukushima** II-3 crack is the first confirmed in 316L in core internals, there have been incidents of SCC found in 304L--likewise a low-carbon steel--at several reactors in the last 15 years, including Cofrentes in Spain and Chinshan in Taiwan. But they said that SCC has been found in primary circuit piping, which is subject to different SCC-related variables than the core shroud.

Industry sources familiar with the Japanese BWR program said that, so far, Japanese utilities have been slow to undertake prophylactic measures to increase the resistance of core internals to SCC. BWR vendor General Electric has injected noble chemicals to dramatically reduce ECP in primary circuit equipment at about 30 U.S. BWRs, but in Japan the first application of noble chemical injection, at Chubu Electric Power's Hamaoka, is scheduled in a few months.

Nevertheless, the safety expert stressed that the shroud cracking isn't considered an urgent safety issue because the shroud's function is to maintain core structural integrity during a loss-of-coolant accident, not to routinely ensure system safety. He said that's why METI suggested the inspections could be done during scheduled outages.

The expert added that the repair at **Fukushima** II-3 ``will be rather easy'' because the crack is located on the outside of the lower shroud ring, where tie rods are easy to install. However, if SCC is found at a location that might threaten a split between the top and bottom of the shroud, that situation might pose a more difficult technical problem, he said.

1 novembre 2001 : arrêt automatique du réacteur n°2 pour des raisons inconnues

Japan's TEPCO says reactor on automatic shutdown.

Reuters News

LBA

TOKYO, Nov 1 (Reuters) - Tokyo Electric Power Co Inc said a 1.1 gigawatt (gW) **nuclear** reactor, which was in the process of resuming operation after a regular maintenance shutdown, halted operations automatically early on Thursday.

TEPCO said there was no radiation leak as a result of the incident at the **Fukushima** No. 2 power plant's No. 2 reactor in **Fukushima** prefecture.

The company said had been in the process of restarting the facility when operations were halted automatically by equipment monitoring neutrons.

The cause of the shutdown, which took place at 1:05 a.m. (1605 GMT Wednesday), was under investigation, the company said.

TEPCO, Japan's largest power company, supplies electricity to Tokyo and the surrounding region.

Nuclear power accounts for about one-third of Japan's electricity needs.

17 juin 2002 : la préfecture de Fukishima envisage d'augmenter la taxe nucléaire à 13,5%

Fukushima gov't to propose nuclear fuel tax hike to 13.5%.

Kyodo News

KYODO

The **Fukushima** prefectural government decided Monday to propose a plan to raise **nuclear** fuel tax to 13.5% from the current 7%, prefectural officials said.

The government will propose a draft to amend an ordinance to raise the tax Thursday at a prefectural assembly session.

The proposal is expected to be adopted at the assembly and enter into force on Nov. 10. The prefectural government expects an increase in tax revenues of about 9 billion yen in the next five years.

The **nuclear** fuel tax is a local tax imposed on operators of **nuclear** power plants.

Tokyo Electric Power Co. (TEPCO), which operates 10 **nuclear** power plants in the prefecture, will ask the prefectural government to review the plan.

According to the amendment draft, the taxation system will be changed into two separate systems. The ratio of **nuclear** fuel tax will be raised to 10% of the fuel price compared with the current 7%.

In addition, the government will impose an additional tax on the weight of fuel at 6,000 yen per kilogram. The combined effective tax rate will be 13.5%.

The prefectural government initially sought a combined effective rate of 16.5%, the officials said.

However, the prefecture withdrew the plan due to strong opposition from TEPCO, they said.

The **nuclear** fuel tax is to be reviewed every five years.

21 juin 2002 : le ministre de l'Economie est opposé à l'augmentation de la taxe nucléaire

Hiranuma opposes Fukushima Pref. nuclear fuel tax plan.

Kyodo News

KYODO

Economy, Trade and Industry Minister Takeo Hiranuma indicated Friday he is opposed to plans by **Fukushima** Prefecture to increase the tax on **nuclear** fuel.

"We will have to cautiously judge it from the standpoint of future energy and environment policies," Hiranuma said in a press conference.

"Getting the taxpayer's understanding is another factor," the minister said, referring to Tokyo Electric Power Co., which operates two **nuclear** power plants in the prefecture.

On Thursday, the **Fukushima** prefectural government proposed to the prefectural assembly to raise the tax on **nuclear** fuel paid by plant operators to 13.5% from the current 7%, for a five-year period.

Tokyo Electric Power has submitted a petition urging the local government drop the plan, but the assembly is expected to adopt and put it into force Nov. 10.

4 juillet 2002 : accord de l'assemblée préfectorale pour la hausse de la taxe nucléaire

Fukushima pref. panel OKs raise in nuclear fuel tax.

Kyodo News

KYODO

The **Fukushima** prefectural assembly's committee on general affairs on Thursday approved a proposal to raise the local tax on **nuclear** fuel, paving the way for increasing the tax rate to 13.5% from the current 7%.

The full assembly is scheduled to vote on the proposal on Friday.

Tokyo Electric Power Co. (TEPCO) opposes the tax hike as it is the sole payer of the local tax. TEPCO runs 10 **nuclear** reactors at its two power plants in the prefecture.

The **Fukushima** prefectural government hopes that the tax increase will take effect Nov. 10 pending approval by the Ministry of Public Management, Home Affairs, Posts and Telecommunications.

The Japan Business Federation (Nippon Keidanren) and the Federation of Electric Power Companies oppose the proposed tax increase, saying it would lead to higher power bills and undermine Japan's industrial competitiveness.

The proposal calls for raising the tax rate on **nuclear** fuel prices to 10% from 7% and introducing a fresh charge of 6,000 yen per kilogram, resulting in an increase of some 9 billion yen in tax revenues over the next five years.

The prefecture plans to raise the weight-based charge to 11,000 yen per kilogram in the future.

At present, **Fukushima** Prefecture and 11 other prefectures impose the local tax on **nuclear** fuel.

10 août 2002 : inquiétudes sur la résistance des centrales en cas de tremblement de terre

FOCUS - Concern over quake resistance of reactors rising.

Kyodo News

KYODO

(EDS: THIS IS THE FOURTH OF FIVE NEWS FOCUS STORIES ON THE **NUCLEAR** POWER INDUSTRY) In August 1998, when the public's memory of the disastrous 1995 Great Hanshin Earthquake was still fresh, Chugoku Electric Power Co. made public that an 8-kilometer-long active fault had been confirmed near the Shimane **nuclear** power station in the town of Kashima in Shimane Prefecture.

Part of the fault is only 2.5 kilometers away from the station, but a Chugoku official issued a safety declaration, saying, "Even if the fault moves, it's within an anticipated earthquake movement."

Chugoku had previously insisted that no active fault existed at the place where it was discovered, but its discovery in a fresh survey triggered a sense of crisis among residents at the possibility of a major earthquake occurring there.

For the state, **nuclear** power station operators and residents nearby, the earthquake resistance of such stations is a major problem.

In October 2000, an earthquake rocked western Shimane Prefecture where there is no active fault on the surface. Its magnitude on the open-ended Richter scale was 7.3.

It has been said that a quake of more than 6.5 magnitude can only occur where an active fault is seen on the surface. The **Nuclear** and Industrial Safety Agency says in its earthquake resistance guideline that where there is no active fault on the surface, the maximum anticipated quake magnitude is 6.5.

The quake in Shimane Prefecture disproved this, sparking concern over the earthquake resistance of **nuclear** power stations built based on the committee's guideline.

The committee began drastically reviewing its guideline last year for the first time in 20 years. "The present guideline doesn't include conceivable earthquakes," said Katsuhiko Ishibashi, a professor of state-run Kobe University.

Shigeo Mogi, an earthquake expert, said, "Nobody knows what happens in a mammoth quake. It is abnormal that the Hamaoka **nuclear** power station of Chubu Electric Power Co. stands at a site which would most likely be shaken a possible quake in the Tokai district in central Japan."

Emerging in the process of reviewing the guideline is a proposal to evaluate the impact of a quake by the probability of accidents involving damage to the **nuclear** core, like that observed in the 1979 Three Mile Island **nuclear** power plant accident in the United States.

An estimate by the Japan Atomic Energy Research Institute using the reactor No. 2 of Tokyo Electric Power Co.'s **Fukushima nuclear** power plant as a model, the likelihood of an earthquake occurring is once in every 10,000 years and the probability of accidents occurring in a quake is once in every 100,000 years.

The committee will finish reviewing its guideline in 2004. Depending on its conclusion, reinforcement of existing **nuclear** power stations may be inevitable, committee sources said.

But the state and electric power companies said **nuclear** power stations are safe enough, and no major reinforcement work is needed.

22 août 2002 : fissures découvertes dans certaines canalisations

Cracks Found in Pipes at Tokyo Electric N-Plant

Jiji Press English News Service

JIJI

Tokyo, Aug. 22 (Jiji Press) - Tokyo Electric Power Co. said Thursday it has found cracks in some pipes at a **nuclear** power plant in **Fukushima** Prefecture, northern Japan.

But there will be no problem even if the pipes accidentally burst, the company said.

Tokyo Electric Power discovered cracks on the surface of 36 pipes which supply or drain high-pressure water to operate control rods in one of the plant's reactors, during a recent regular

inspection.

The company will replace all of the 274 water-supplying pipes installed at the No. 3 reactor at its **Fukushima** No. 1 **nuclear** plant, while further investigating the cause of the cracks.

29 août 2002 : TEPCO a dissimulé plusieurs accidents nucléaires depuis les années 80

TEPCO Didn't Report Past Nuclear Plant Troubles - Kyodo

Dow Jones International News

DJI

TOKYO -(Dow Jones)- Tokyo Electric Power Co. (J.TER or 9501) didn't inform the government about problems at its **nuclear** power plants from the late 1980s to the 1990s in Japan, Kyodo News reported Thursday.

Tokyo Electric Power, commonly known as TEPCO, will brief on this matter at 1000 GMT in Tokyo. The TEPCO president and vice presidents will attend the press conference.

The problems included cracks at power plants in Kashiwazaki-Kariwa and **Fukushima** in northern Japan, Kyodo reported.

-Tokyo Bureau, Dow Jones Newswires; 813-5255-2929

A government affiliate for **nuclear** plant safety said TEPCO had allegedly improperly stated 29 cases of trouble on its inspection and maintenance record at three **nuclear** power plants, Kyodo reported.

The unconfirmed report comes at a time when a series of corporate scandals have sparked public anger and raised questions about corporate ethics and product safety in Japan.

Embroiled in a beef-mislabeling scandal, Nippon Meat Packers Inc. (J.NMP or 2282) admitted earlier this month its unit mislabeled beef to receive subsidies under a government-run beef buyback scheme aimed at helping businesses which were affected by the mad cow disease outbreak in Japan last year.

-Tokyo Bureau, Dow Jones Newswires; 813-5255-2929

30 août 2002 : les falsifications de TEPCO remettent en question la sécurité nucléaire

ANALYSIS: Tepco Scandal Questions Nuclear Safety Measures

Nikkei Report

NKRP

TOKYO (Nikkei)--Tokyo Electric Power Co.'s (9501) falsification of **nuclear** power plant inspection records is casting doubt over Japan's **nuclear** safety measures.

Japan's largest power utility and its subcontractor allegedly failed to correctly report cracks detected at **nuclear** power plants in Niigata and **Fukushima** prefectures from the late 1980s to early 1990s. An investigation into the matter is now underway.

The scandal has raised questions about the risks of leaving power companies in charge of safety measures. If concerns are not quelled, it could adversely affect Japan's **nuclear** energy policy, critics warn.

Nuclear power plants are inspected regularly every 13 months. During that time, **nuclear** reactors are shut down for a month or two to check equipment and piping for irregularities. Experts from the **Nuclear** and Industrial Safety Agency are on-site for the inspection of the emergency core cooler system and other critical equipment. But shrouds and jet pumps, equipment where Tepco found problems, are checked by the power companies, which are required to report only major problems to the agency.

"Many power companies leave the safety checking to subcontractors and manufacturers, and have little knowledge of the inspections themselves," said a technology critic.

Tepco had also asked General Electric International Inc., the Japan unit of General Electric Co. of the U.S., to conduct the tests.

An insider, reportedly a former GE employee, informed the Ministry of Economy, Trade and Industry (METI) about the false reporting in July 2000. Tepco President Nobuya Minami knew about this but did not conduct a full-scale investigation since then.

Minami said he realized the seriousness of the situation for the first time this March, when GE's top officials approached him about launching a joint investigation.

Tepco had outsourced most of its core reactor inspections to GE, which boasts the world's best technology for detecting cracks in core-reactor-related parts. But Tepco employees were also present when GE workers inspected the reactors, insiders familiar with the matter say. On-site Tepco workers may have failed to report the cracks to top officials after judging that they were insignificant, critics said.

In May, Tepco set up an in-house investigation team, which has been interviewing employees. But the team noted, "We do not know the details, including whether Tepco or GE falsified data."

Critics are also expected to question whether the **Nuclear** and Industrial Safety Agency and other regulators took enough action to prevent such mishaps. About two years have passed since the incident was first reported. METI launched an inquiry into Tepco soon after the issue came to light, but Tepco's delayed response has made it difficult to confirm the facts of the case.

A pipe rupture at Chubu Electric Power Co.'s (9502) **nuclear** reactor at a power plant in Hamaoka, Shizuoka Prefecture, last November also involved a pipe that was only required to be voluntarily tested by power companies.

(The Nihon Keizai Shimbun Friday morning edition)

31 août 2002 : certaines fuites ont été négligées par des employés de TEPCO

TEPCO employees apparently took reactor flaws lightly.

Kyodo News

KYODO

Tokyo Electric Power Co. employees may not have taken cracks found at its **nuclear** facilities seriously enough during inspections, sources familiar with the case said Saturday.

The employees apparently thought there was no need to mend the damage and did not report the problem, basing their judgment on similar cases abroad that had not been considered to pose a danger, the sources said.

TEPCO is suspected of concealing damage in 29 cases at three **nuclear** power plants found during the 1980s and 1990s.

The most serious type of damage found were cracks in **nuclear** reactor shrouds. The other cases are not considered to pose safety risks.

Cracks are usually caused by decay and stress. A number of them have been reported in the United States and Europe since the 1990s.

Cracked shrouds are usually replaced in Japan. But in the U.S. and Europe they are often mended, or left alone if the damage is not considered dangerous, the sources said.

In Japan, the first such crack was first found in 1994 at the No. 2 reactor of TEPCO's **Fukushima** No. 1 **nuclear** power plant located in northeastern Japan, they said.

The **Nuclear** and Industrial Safety Agency at the Economy, Trade and Industry Ministry plans to investigate the suspected cover-up when it begins inspecting the three TEPCO plants on Monday.

They are **Fukushima** No. 1 and No. 2 plants and the Kashiwazaki-Kariwa facility - one of the world's largest **nuclear** power plants.

TEPCO and its subcontractor may have acted illegally in their alleged failure to report the damage, according to the agency. The Japanese utility had outsourced inspections to General Electric International Inc., the Japan unit of General Electric Co. of the U.S.

2 septembre 2002 : nouvelles révélations sur les falsifications de TEPCO

TEPCO hit by new allegations.

Daily Yomiuri

YOMSHI

1

Tokyo Electric Power Co. (TEPCO), which was found to have falsified records of inspections at its **nuclear** power plants, also concealed faults found in government-ordered inspections, sources said Saturday.

Since last year, the **Nuclear** and Industrial Safety Agency has ordered electric power firms to carry out inspections, yet TEPCO avoiding inspecting welded sections of core shrouds on which cracks had been found but concealed.

TEPCO later told the agency that no faults were detected with the core shrouds, the sources said.

The agency plans to question TEPCO officials as it suspects the company intentionally excluded the damaged parts from the inspection so it would not have to replace or repair them.

During the latter half of the 1980s and the 1990s, TEPCO entrusted inspections of its **nuclear** power plants to General Electric International Inc. (GEII).

Though GEII found cracks on welded sections of the core shrouds, TEPCO altered the inspection records to hide the problem. GEII's inspection found a total of 35 cracks in eight locations at five **nuclear** power reactors in three power plants, but the plants continued their operations without the sections being repaired or replaced.

The reactors included the No. 4 reactor at **Fukushima** No. 1 **nuclear** power plant in **Fukushima** Prefecture; the Nos. 2, 3 and 4 reactors of **Fukushima** No. 2 **nuclear** power plant; and the No. 1 reactor of Kashiwazaki-Kariwa **nuclear** power plant in Niigata Prefecture.

TEPCO eventually reported the most serious case, a 1.4-meter-long crack in the No. 3 reactor of the **Fukushima** No. 2 plant, to the agency in July last year, saying that the firm had found it during its voluntary inspection that month.

After receiving the report, the agency instructed electric power companies with **nuclear** power plants to inspect core shrouds in September last year.

The agency gave the order because it feared similar cracks might have occurred on identical **nuclear** reactors and that they might lead to safety problems.

2 septembre 2002 : arrêt prévu de quatre réacteurs utilisant des pièces endommagées

Tokyo Electric to Halt 4 N-Reactors in Fukushima.

Organisation of Asia-Pacific News Agencies

OANA

Tokyo, Sept. 2 (Jiji Press)-Tokyo Electric Power Co. (9501) decided Monday to halt operations at four **nuclear** reactors suspected of using cracked equipment in **Fukushima** Prefecture, northeastern Japan, by the end of the week to conduct emergency inspections.

The four reactors belong to the **Fukushima** No. 1 and No. 2 **nuclear** plants.

Tokyo Electric Power has already decided to suspend operations at a **nuclear** reactor of the Kashiwazaki-Kariwa plant in Niigata Prefecture, central Japan, which is also seen to have cracks left unrepaired in its equipment called shrouds for separating the flow of water within reactors.

The company, hit by a data falsification scandal over the condition of the plants, will later in the day announce the timing of the suspensions at the **Fukushima** and Kashiwazaki-Kariwa plants.

The Agency for **Nuclear** and Industrial Safety, under the Ministry of Economy, Trade and Industry, has said that there would be no safety problems even if operations at the **nuclear** reactors were not stopped immediately.

Concern over their safety heightened in local communities, however, and Tokyo Electric Power decided to suspend operations following calls for emergency checks.

2 septembre 2002 : les réacteurs suspects continueront à fonctionner

Seven damaged nuclear reactors to operate uninterrupted.

BBC Monitoring Asia Pacific - Political

Text of report in English by Japanese news agency Kyodo

Tokyo, 2 September: Seven of the eight **nuclear** reactors that allegedly have cracks on their shrouds will continue operations until next year without a halt, officials of their operator, Tokyo Electric Power Co. (TEPCO), said Sunday [1 September].

"Even though there are cracks in the shrouds, the damage won't have an immediate effect on the safety of the reactors," a TEPCO official said.

"There exists no safety problem even in the worst-case scenario," an official of the **Nuclear** and Industrial Safety Agency said, expressing the agency's intention to allow TEPCO to continue to operate them uninterrupted.

Under the TEPCO plan, one reactor suspected of having cracked shrouds will keep operating without being stopped for safety checks for more that a year from now, the company officials said.

TEPCO's plan, however, is certain to heighten calls among local residents and politicians for an early halt to the problem reactors so inspections can be conducted.

In a move apparently taken to ease concerns over the safety of the reactors that allegedly have

cracked shrouds, TEPCO said Sunday it will move up regular checks on the No 1 reactor at TEPCO's Kashiwazaki-Kariwa **nuclear** power plant on the Sea of Japan coast by several weeks. The process to halt the reactor is expected to begin as early as Monday.

Nuclear reactors must be inspected at least every 13 months under the Electric Utility Law. Most reactors keep operating uninterrupted until the end of the 13th month into their full operations. With **nuclear** safety agency approval, a reactor can continue operations for up to one month more.

Of the eight reactors allegedly with cracks on their shrouds, the No 2 reactor at the **Fukushima** plant in northeastern Japan resumed full operations on 2 August and is expected to operate uninterrupted until next summer.

The plant's No 6 reactor is test-operating and is in the final phase of its regular inspections. If it resumes full-fledged operations as scheduled, it will not be halted until autumn 2003.

Except for the No 1 reactor at the Kashiwazaki-Kariwa plant, which will undergo a regular check this month, the five remaining reactors in question will reach their 13th month of uninterrupted operations between January and June 2003.

The **nuclear** safety agency has said that it is up to TEPCO to decide whether to stop the reactors in question for early inspections.

In the alleged cover-up case that is quickly developing into a major scandal for the country's largest power producer, TEPCO is suspected of concealing damage in 29 cases found at three **nuclear** power plants during the 1980s and 1990s.

TEPCO sources have said that company employees apparently saw no need to repair the cracks found at its **nuclear** facilities and failed to report the problem during inspections. The failure to report was based on the understanding that similar cases abroad had not been considered to pose a danger, the sources added.

The most serious damage found was cracks in **nuclear** reactor shrouds, important non-fuel parts of the reactor.

Caused by decay and stress, cracked shrouds in **nuclear** reactors are normally subject to replacement in this country, but in the United States and Europe they are often mended, or left alone if the damage is not considered serious.

Sources said the **nuclear** safety agency intends to investigate TEPCO's alleged cover-up on Monday, suspecting the firm and its subcontractor, General Electric International Inc., may have acted illegally in not reporting the damage. The subcontractor is the Japan unit of General Electric Co. of the United States.

TEPCO sources have said the company's president and its chairman have expressed their intentions to resign over the scandal.

Source: Kyodo News Service, Tokyo, in English 2135 gmt 1 Sep 02.

The Ministry of Economy, Trade and Industry's **Nuclear** and Industrial Safety Agency said Thursday it has found evidence of false records regarding cracks at Tokyo Electric Power Co. (TEPCO) **nuclear** plants from the late 1980s to early 1990s.

An inspection is under way into Japan's largest power utility and its subcontractor over alleged failure to correctly report cracks detected at the Kashiwazaki-Kariwa **nuclear** plant in Niigata Prefecture, and the No. 1 and No. 2 **Fukushima nuclear** plants in **Fukushima** Prefecture, it said.

Speaking to reporters at his office, Prime Minister Junichiro Koizumi criticized TEPCO, saying, "I haven't received any report yet, but wrongdoing is bad."

TEPCO has submitted a list of 29 allegedly incorrect records on cracks or signs of cracks in various

devices in the core structures of 13 reactors at the plants, which could constitute a breach of the law governing electric power companies, agency officials said.

There are also concerns that eight reactors may still have cracked devices not replaced or fully repaired, though the agency believes they would have no serious impact on the safety of the reactors, the officials said.

TEPCO President Nobuya Minami apologized and said in a press conference that the incident will deal a further blow to its plan to introduce uranium-plutonium mixed oxide (MOX) fuel at the Kashiwazaki-Kariwa plant.

"I don't think now we can implement the plan as we had aimed for," Minami said. The fuel's debut in Japan has been delayed in part as Kariwa residents rejected it in a referendum in May last year.

Niigata Gov. Ikuo Hirayama called the alleged false records an "abominable act" and said the prefectural government will refuse the MOX plan for the time being.

Kashiwazaki Mayor Masazumi Saikawa said, "It is an extremely serious problem of corporate attitude if a power company, which must take utmost care in safety, was failing to disclose the facts correctly."

Holding an emergency news conference in the city of **Fukushima, Fukushima** Deputy Gov. Akira Kawate said the incident is grave enough to prompt the prefectural government to make a "fatal decision" as a host of **nuclear** plants, although he did not elaborate.

Power utilities are required to check the devices concerned themselves and report results to the government agency. The agency does not directly inspect such devices because they are considered unrelated to the safety of the plants, the officials said.

TEPCO had outsourced checks to General Electric International Inc. (GEII), the Japan unit of General Electric Co. (GE) of the United States. It is not yet known whether TEPCO or GEII is to blame for the incorrect reporting, they said.

GE said in a statement it will closely cooperate with METI and TEPCO over the situation.

The agency plans to conduct on-site inspections at TEPCO, and require the power company to set up extensive preventive measures, the officials said.

It will also ask other power firms to make sure that they have not engaged in similar false reporting, they said.

The agency's inspection was prompted by insider information obtained in July 2000. It revealed the matter before reaching a conclusion because both TEPCO and GEII have conceded possible involvement, the officials said.

3 septembre 2002 : arrêt du réacteur n°2 en raison d'une fuite radioactive.

Tepco Manually Shuts 1,100-MW Reactor; No Leakage Outside

Dow Jones International News

TOKYO -(Dow Jones)- Tokyo Electric Power Co. (J.TER or 9501), or Tepco, said Tuesday it manually shut its 1,100-megawatt **nuclear** reactor in northern Japan Monday night after a monitor warned of a radiation leak from an exhaust pipe.

A very small quantity of radiation may have leaked, but there was no leakage outside the plant, Tepco said.

The company decided to close the No. 2 reactor at the **Fukushima** Daini **nuclear** power station to inspect the cause of the trouble.

Tepco, the largest Japanese power company, has been hit by a scandal over the falsification of safety records on **nuclear** reactors from late 1980s to 1990s.

Both the government and Tepco have said that the reactors with falsified records are operating safely. But the incident severely undermined public trust for the country's **nuclear** policy.

To take responsibility of the scandal, Tepco President Nobuya Minami, Chairman Hiroshi Araki and two advisors will resign by mid-October.

Monday, the company announced that it will shut down five of the company's 17 reactors, including the No. 2 reactor at **Fukushima** Daini, from September to October for safety inspections.

4 septembre 2002 : fuite de gaz radioactif : cent fois la dose normale

Radiation 100 times normal in Japanese N-plant. BY By Stephen Lunn * Tokyo correspondent.

The Australian

AUSTLN

9

RADIATION levels 100 times the normal level were found late on Monday in steam inside the Japanese **nuclear** power plant where inspectors last week discovered the owners had falsified safety records and failed to repair cracks in **nuclear** reactors.

Tokyo Electric Power Company said the new leak and the records scandal were unrelated, but admitted higher than normal levels of radiation were detected in the exhaust from the **nuclear** power station.

The leak, which Tepco said did not affect the atmosphere outside the **Fukushima** No 2 plant, reportedly originated from a small hole in a tube containing **nuclear** fuel.

This allowed the radiation to leak into the coolant water, causing the high radiation levels.

News of the leak, which further heightened public anxiety over the safety of the nation's **nuclear** program, came as company president Nobuya Minami, chairman Hiroshi Araki and three other senior officials pledged to resign and take responsibility for the systematic cover-up of damage at

three of the company's plants, which it is estimated could have involved up to 100 employees.

The Government's **nuclear** inspection agency last week found Tepco had falsified reports, including one on a crack in the shroud (stainless steel that surrounds the reactor's core) of the 1.1 million kilowatt boiling-water reactor in the **Fukushima** No 2 plant, and continued operating without mending the crack.

The company originally planned to scale down operations and inspect the shroud in October, but will now conduct a full inspection immediately as the plant is shutting down. Another four plants will also be shut down soon.

"Our internal probe so far leaves us with no doubt our employees were indeed involved in the cover-ups," Mr Minami said, admitting the deception could have been occurring for more than 15 years.

Tepco shares, long considered some of the most bullet-proof stocks in Japan, given the company monopolises supply in parts of the country, lost another 1 per cent yesterday.

The shares are now 6 per cent lower than before the scandal was revealed late last week.

Nuclear energy accounts for about one-third of Japan's electricity supply.

4 septembre 2002 : TEPCO gèle la construction de quatre nouveaux réacteurs

TEPCO to Freeze Construction of 4 Nuclear Reactors.

Jiji Press English News Service

JIJI

(c) 2002

Tokyo, Sept. 4 (Jiji Press) - Tokyo Electric Power Co. has decided to suspend, at least for the time being, a plan to build four **nuclear** reactors in **Fukushima** and Aomori Prefectures, both northeastern Japan, sources familiar with the matter told Jiji Press Wednesday.

As a result, Tokyo Electric has now frozen all its major **nuclear** power-related projects, including "plu-thermal" **nuclear** fuel recycling projects in **Fukushima** and Niigata Prefectures, central Japan.

According to the sources, Tokyo Electric, upon obtaining local consent by the end of the current fiscal year to March 2003, had intended to begin construction of two reactors at the **Fukushima** plant and two others at the Aomori plant as part of Japan's national electricity development program.

But the company decided that local understanding of constructing the 1.38-million-kilowatt reactors, the largest in Japan, is unlikely to be forthcoming, in the wake of recent revelations of falsified inspection and repair records at its existing reactors.

If the freeze is prolonged, it could affect Tokyo Electric's power supply plans for the future, and even force the Japanese government to alter its energy policy, the sources said.

Tokyo Electric issued a statement denying the freeze plan. No such decision has been made, it said.

Operations of the new reactors were slated to begin from around fiscal 2008 to 2010.

6 septembre 2002 : TEPCO a camouflé des fissures importantes pendant quatre ans

'TEPCO hid major crack for 4 years'.

Daily Yomiuri

YOMSHI

2

Tokyo Electric Power Co. (TEPCO), under a cloud for falsifying inspection records of its **nuclear** power plants, hid a serious crack in one of its reactors, did not repair it for years and failed to tell other operators of the risk of cracks developing in similar reactors, the **Nuclear** and Industrial Safety Agency has found.

The crack was one of several found in TEPCO's No. 3 reactor in its No. 2 **Fukushima Nuclear** Power Plant in **Fukushima** Prefecture around 1997, agency officials said, adding that the cracks were not fixed until July 2001. The No. 3 reactor began operation in 1985.

All this time, the reactor continued operation, the officials said.

They said, "The chance the cracks could have caused a serious accident may have been small, but this is the most flagrant case in a string of inspection record falsifications."

The agency probably will search TEPCO headquarters Friday on the suspicion company executives were involved in the alleged falsification of records.

During the latter half of the 1980s and into the 1990s, inspections of TEPCO's plants, including **Fukushima** No.2, were conducted by General Electric International Inc. (GEII).

GEII inspectors found the cracks in the No. 3 reactor around 1997 and reported them to TEPCO, the officials said.

GEII found cracks in four out of seven welded sections of the core shroud, with one crack having expanded to cover the entire reactor core, which has a circumference of about 20 meters, the officials said.

Core shrouds are in direct contact with **nuclear** fuel, and cracked shrouds must be immediately checked for durability, the officials said, but the No. 3 reactor was kept in operation for the next four years.

The core shroud was made of stainless steel, which is more crack-resistant than other materials. "TEPCO should have made safety checks as soon as GEII pointed out the cracks, and it should have informed other operators that stainless steel core shrouds can develop cracks," the officials said.

TEPCO eventually reported the most serious case to the agency in July last year, claiming it had been found in a voluntary inspection conducted that month, the agency said.

13 septembre 2002 : TEPCO a falsifié des enregistrements vidéo

Govt Probe Finds Tepco Ordered Falsification Of Videotaped Inspection

Nikkei Report

NKRP

TOKYO (Nikkei)--Tokyo Electric Power Co. (9501) in 1989 instructed General Electric International Inc. to falsify a videotaped inspection record of its power plants, according to documents submitted to a government panel Friday by the **Nuclear** and Industry Safety Agency.

The panel, which is overseeing the agency's investigation of Tepco's falsification of power plant inspection data, met for the first time on Friday. The agency presented the committee with evidence discovered through its investigation so far.

According to the documents, the Japanese unit of General Electric Co., to which Tepco outsourced inspections of its power plants, found six cracks in a steam dryer when it inspected the No. 1 reactor at a Tepco **nuclear** power plant in **Fukushima** Prefecture. But while making a videotape to report the cracks to the then Ministry of International Trade and Industry, it was instructed by Tepco to edit out the part showing the cracks because the utility feared it would have to replace the steam dryer.

(The Nihon Keizai Shimbun Friday evening edition)

16 septembre 2002 : TEPCO a utilisé des pièces non autorisées dans un réacteur

TEPCO used unauthorized bolts in reactor.

Japan Energy Scan

JPES

0

TOKYO, Sept. 10 Kyodo

An panel set up by Tokyo Electric Power Co. (TEPCO) to investigate the company's cover-up of **nuclear** reactor faults has found unauthorized bolts were used to repair a reactor of its **Fukushima** No. 1 plant, company sources said Tuesday.

The bolts were used to secure the cover of a manhole of the plant's No. 5 reactor, the sources said. The manhole is used to access the pressurized container and is located just below the reactor's shroud.

During a regular check, it was found that some of the bolts used for the cover were loose. Engineers tried to screw them tight, but the threads were so worn the bolts needed to be replaced, according to the investigation.

The engineers finally used new bolts not certified by the government, and Tokyo Electric Power failed to report the repair to the government, the sources said.

The repair of the manhole cover is mentioned in a list of 29 possibly falsified inspection reports Tokyo Electric Power submitted to the **Nuclear** and Industry Safety Agency last month, the sources said.

The utility claims the use of the unauthorized bolts does not affect the safety of the reactor, the sources said.

Tokyo Electric Power has 17 reactors in **Fukushima** and Niigata prefectures. It has suspended the operation of two of them in connection with the falsification of inspection reports, and three other reactors will be temporarily shut down toward late October.

The company could be ordered to suspend the operation of the No. 5 reactor of the **Fukushima** No. 1 plant if further investigation shows the bolts in question pose a safety problem.

The sources quoted a company official as saying additional suspension of its reactors would likely deal a serious blow to the utility's ability to supply power.

26 septembre 2002 : nombreuses fissures découvertes sur le réacteur n°3

Tepco Reports Numerous Cracks In Pipes At Fukushima Nuke Plant

Nikkei Report

NKRP

TOKYO (Nikkei)--Tokyo Electric Power Co. (Tepco) (9501) reported Wednesday that it found cracks in 242 out of a total of 282 stainless steel pipes that send water into the control rods of the No. 3 reactor of its **Fukushima** No. 1 plant in **Fukushima** Prefecture. Complete breaks had occurred in three of these pipes.

These pipes are used to insert control rods, which regulate **nuclear** reaction, into the reactor core through water pressure. The pipes serve as a safeguard for the reactor, preventing it from running out of control.

The cracks could eventually result in breaks that lead to water leaks and loss of water pressure.

Tepco reports, however, that there is no danger of water leaks or radiation leaks.

The company also reports that another system will take over if water pressure is lost. "When there is no water pressure, there is a mechanism to automatically insert the control rods into the reactor. So, there is no danger," company officials said.

But given that close to 90% of the pipes had cracks, Tepco plans to fully replace the pipes in reactor No. 3's system and to inspect other reactors. The company also plans to revamp its method for inspecting the pipes.

(The Nihon Keizai Shimbun Thursday morning edition)

30 septembre 2002 : le gouverneur de Fukushima retire son accord pour l'utilisation de plutonium

Fukushima scraps 'pluthermal' project plan over scandal.

Japan Energy Scan

JPES

0

FUKUSHIMA, Japan, Sept. 26 Kyodo

Fukushima Gov. Eisaku Sato said Thursday he has withdrawn his approval of a Tokyo Electric Power Co. (TEPCO) "pluthermal" power-generation project in the prefecture because of the power company's cover-up of **nuclear** reactor faults.

Speaking at a prefectural assembly session, Sato said conditions for the prior consent to go ahead with the project "have all disappeared and (the plan), in my view, has been withdrawn."

The prefectural government in 1998 decided to allow the pluthermal project at TEPCO's **Fukushima** No. 1 **nuclear** power plant after holding consultations with the mayors of the towns of Futaba and Okuma where the plant is located.

The pluthermal project involves burning mixed oxide fuel (MOX) in light-water reactors. MOX is made of uranium and plutonium extracted from spent **nuclear** fuel.

TEPCO has admitted covering up faults found at reactors in the Kashiwazaki-Kariwa plant in Niigata Prefecture and **Fukushima** No. 1 and No. 2 plants in **Fukushima** Prefecture from the late

1980s to 1990s.

On Sept. 12, Niigata Gov. Ikuo Hirayama said the prefecture would revoke its initial decision in 1999 to allow TEPCO to proceed with a pluthermal project because of the cover-up scandal.

The rejection by two prefectures of the pluthermal project deals a heavy blow to the government's plans to use plutonium recovered from spent **nuclear** fuel for power generation.

Since the TEPCO scandal came to light, two other power companies, Tohoku Electric Power Co. in northeastern Japan and Chubu Electric Power Co. in central Japan, have revealed finding multiple cracks in reactor parts.

4 octobre 2002 : de nouvelles fissures découvertes sur le réacteur n°2

Japan - Further Cracks Reported at TEPCO Reactors BY Mike Hurle

WMRC Daily Analysis

WDAN

The Tokyo Electric Power Company has revealed evidence of a further five cracks at its **Fukushima**-2 **nuclear** reactor. The news follows a series of revelations over the last month including falsification of safety inspection documents over a period dating back to the 1980s (see Japan: 2 September 2002: Reporting Scandal Forces Resignation of TEPCO Executives and Japan: 1 October 2002: More False Documents Surface at TEPCO). TEPCO has been forced to close several reactors, leaving it more reliant on thermal power plants to meet electricity demand (see Japan: 13 September 2002: TEPCO Reopens Thermal Plant to Cover **Nuclear** Shortfall).

11 octobre 2002 : un cinquième réacteur va être arrêté pour rechercher d'éventuelles fissures

TEPCO to shut fifth reactor for safety checks.

Reuters News

LBA

TOKYO, Oct 11 (Reuters) - Tokyo Electric Power Co Inc (TEPCO) said on Friday it will shut down a **nuclear** reactor suspected of having a crack in its shroud for an unplanned safety check this weekend.

The closure on October 13 of the **Fukushima** No. 2 **nuclear** plant in northern Japan would be the fifth unplanned shutdown of a reactor by Japan's biggest power utility.

The unplanned closures of the five reactors follows revelations the company had falsified records on **nuclear** plant safety checks.

Three other **nuclear** reactors have also been shut down, but those closures were for regular maintenance checks.

The combined capacity of the eight reactors is about eight million kilowatts, or about 13 percent of TEPCO's total output capacity.

TEPCO's shares rose five yen, or 0.22 percent, to 2,245 yen on Friday, while the benchmark Nikkei stock average gained 1.07 percent.

14 octobre 2002 : découverte de nouvelles fuites sur le réacteur n°4

TEPCO finds more fractures at Fukushima No. 1 nuclear plant.

Japan Energy Scan

JPES

0

FUKUSHIMA, Japan, Oct. 11 Kyodo

Tokyo Electric Power Co. (TEPCO) said Friday it has confirmed new fractures in 10 water pipes at the No. 4 reactor of the **Fukushima** No. 1 **nuclear** plant.

Water was leaking out of one of the cracks but it poses no danger of a radioactive leak outside the reactor, the company said.

The pipes carry water used to move the driving shaft of control rods in the reactor.

The most serious fracture -- about 10 millimeters in length -- had gone right through a stainless steel pipe 4.55 mm thick, TEPCO said. The other pipes had cracks up to 50 mm long and between 0.5 and 2 mm deep, it said.

The company said the most serious fracture was found on Sept. 14

and the others in successive inspections.

The faults were probably caused by corrosion that resulted from seawater leaking from other pipes laid above the water pipes, the company said.

TEPCO said the newly found fractures pose no functional problems but it will replace the pipes just in case.

The fractures were found in inspections TEPCO carried out following the finding of cracks in more than 85% of similar pipes at the No. 3 reactor at the plant.

TEPCO said on Sept. 30 that it found signs of a fracture in the core shroud of the No.4 reactor, where the cracks in the water pipes have been found. The shroud is a stainless-steel cylinder surrounding the core and regulates the flow of cooling water.

The company began reporting the discovery of faults found in its reactors after it was revealed in late August that during the 1980s and 1990s it had falsified safety reports and covered up defects found in safety checks.

25 octobre 2002 : arrêt d'un réacteur sur ordre des autorités

Japan's largest utility company ordered to shutdown reactor

Associated Press Newswires

APRS

TOKYO (AP) - Authorities ordered Japan's largest utility company Friday to suspend the operation of a **nuclear** power reactor for a year as punishment for obstructing a government safety inspection.

The temporary shutdown for Tokyo Electric Power Co., or TEPCO, is the harshest penalty ever imposed on a commercial **nuclear** plant operator in Japan, said **Nuclear** and Industrial Safety Agency spokesman Hideharu Masaoka.

The government measure came hours after TEPCO admitted in a report that it manipulated safety checks on one of the reactors at its **Fukushima** plant from 1991 to 1992. The company also acknowledged submitting falsified reports to government inspectors.

Masaoka said the company duped inspectors by tinkering with pressure gauges just before government inspectors arrived, though the company's actions didn't result in any leakage of radioactive material.

TEPCO spokesman Mamoru Shirakashi said the company began lowering the output of the reactor designated for shutdown. The reactor can generate 460,000-kilowatts.

Fukushima is 240 kilometers (149 miles) northeast of Tokyo.

In a related announcement, Japanese electronics maker Hitachi said its officials had helped TEPCO deceive inspectors. An in-house committee is investigating, though the government has not accused Hitachi of any wrongdoing.

Hitachi is contracted by TEPCO to perform regular safety checks.

In August, TEPCO admitted it had misreported safety problems in the late 1980s and early 1990s after an industry ministry report revealed 29 cases of cracks or minor structural damage in eight of the company's 17 **nuclear** reactors.

The company's top three officials resigned over the scandal, and authorities raided its Tokyo

headquarters last month. TEPCO contended the cracks never posed any serious danger.

The public has become increasingly wary of **nuclear** power since a 1999 radiation leak at a fuel-reprocessing plant killed two workers.

Japan relies on **nuclear** power for about 30 percent of its electricity. TEPCO's plants supply nearly half of the nation's **nuclear** energy.

25 octobre 2002 : de nouvelles falsifications découvertes à Fukushima

Another N-Reactor Misdeed Uncovered at Tokyo Elec.

Jiji Press English News Service

JIJI

(c) 2002

Tokyo, Oct. 25 (Jiji Press) - Tokyo Electric Power Co. has found new malpractice at one of its **nuclear** power plants in **Fukushima** Prefecture, northeastern Japan, the company reported to the government Friday.

According to the major power utility's in-house investigation, employees at the company's **Fukushima** No. 1 **nuclear** plant covered up defects of the containment building of the plant's No. 1 reactor when the government conducted on-site airtightness tests in 1991 and 1992 under the Electric Utility Law, informed source said.

The Agency for **Nuclear** and Industrial Safety, under the Ministry of Economy, Trade and Industry, received the company's report on the wrongdoing the same day.

It plans to order a one-year suspension of the reactor as an administrative penalty, agency officials said. The statute of limitations has run out for slapping a criminal penalty for a violation of the law.

A reactor containment building is designed to contain radiation in the case of an accident.

In the legally required airtightness tests, inspectors measured the rate of air leakage by increasing air pressure within the containment building.

Since the leakage rate was high in the company's own advance tests, employees sent air into the building to keep the pressure stable during the government's inspections, according to the investigation.

(Update) Another TEPCO Cover-Up Revealed.

25 octobre 2002

Jiji Press English News Service

JIJI

Tokyo, Oct. 25 (Jiji Press) - Tokyo Electric Power Co. on Friday admitted to another trouble cover-up at its **Fukushima** No. 1 **nuclear** power plant.

Employees covered up defects in the containment facility of the plant's No. 1 reactor to pass government on-site airtightness tests in 1991 and 1992, said the largest Japanese power supplier, known as TEPCO.

A containment facility is designed to hold in radiation in the event of an accident.

TEPCO and Hitachi Ltd. employees admitted that they injected compressed air into the facility to lower leakage rates in tests in 1991 and 1992.

In 1992, employees of the two companies covered up a failure to properly repair a defective valve in a pipe to the containment facility.

Following TEPCO's revelation, the Agency for **Nuclear** and Industrial Safety, a unit of the Ministry of Economy, Trade and Industry, said it will hold a hearing on Nov. 22 to order a one-year suspension of the reactor as an administrative penalty.

The agency will also urge Hitachi to consider steps to prevent any repeat of the wrongdoing.

At separate press conferences, TEPCO Vice President Ryoichi Shirato and Hitachi President Etsuhiko Shoyama both offered their apologies.

Shoyama said Hitachi was apparently unable to refuse participation in the cover-up at the time.

TEPCO President Tsunehisa Katsumata issued a statement saying that the company will accept the penalty and act appropriately.

1 novembre 2002 : TEPCO retarde la construction de nouveaux réacteurs

TEPCO to delay nuke reactor construction - paper.

Reuters News

LBA

TOKYO, Nov 1 (Reuters) - Tokyo Electric Power Co Inc (TEPCO) will postpone construction of two **nuclear** reactors in northern Japan by more than one year, the Nihon Keizai business daily reported on Friday.

The daily quoted TEPCO's President Tsunehisa Katsumata as saying TEPCO will be forced to review its reactor construction plans because the company's covering up of past inspections data undermined local residents' trust in TEPCO and the **nuclear** industry.

A spokesman at TEPCO, Japan's largest power utility, said it had not yet made a final decision.

TEPCO had originally planned to build its No.7 and No.8 **nuclear** reactors at the **Fukushima** No.1 plant, with operations scheduled to start in October 2008 and October 2009, respectively.

Each reactor was to have a capacity of 1.38 million kilowatts.

TEPCO had originally planned to begin application procedures for gaining permission to construct the reactors in FY2002/2003. Construction was set to begin in April 2004.

The company said last week that its employees had manipulated the air pressure of **nuclear** reactor containers to pass safety tests at the reactor.

TEPCO presented a report of its findings to the Ministry of Economy, Trade and Industry, which is viewing the manipulation as an even more serious safety breach than TEPCO's earlier admission that it had continued to operate **nuclear** plants despite suspecting there were cracks in reactor core shells.

Resource-poor Japan relies on **nuclear** power for one-third of its power supply, but a series of accidents has eroded public faith in the industry.

TEPCO's shares were unchanged by midday at 2,265 yen, while the benchmark Nikkei stock average was up 0.39 percent.

11 novembre 2002 : la préfecture de Fukushima retarde l'application de l'augmentation de sa taxe nucléaire

Fukushima delays planned hike in nuclear fuel tax.

Japan Energy Scan

JPES

0

FUKUSHIMA, Japan, Nov. 9 Kyodo

Fukushima Prefecture has decided to postpone the planned introduction Sunday of a prefectural ordinance sharply raising the local tax on **nuclear** fuel, prefectural officials said Saturday.

The officials said they decided on the postponement out of respect for the wishes of Public Management, Home Affairs, Posts and Telecommunications Minister Toranosuke Katayama. He asked the **Fukushima** prefectural government to try to obtain the consent of Tokyo Electric Power Co. (TEPCO), the sole payer of the tax, for the planned hike.

TEPCO runs 10 **nuclear** reactors at two power plants in the prefecture.

The delay in the implementation of a new **nuclear** fuel tax ordinance means there will be no legal basis for the tax after the existing **nuclear** fuel tax ordinance expires Saturday.

But the local officials said postponing the tax hike plan will do no real damage to its tax revenues since the tax is imposed only on fuel newly loaded. Any such loading is unlikely at least until early next year as TEPCO temporarily shut down six of the 10 reactors following a scandal involving covering up reactor damage.

Katayama disappointed the largest Japanese power firm when he approved the tax hike plan Sept. 27. The approval allows the prefectural government to raise the tax rate to 10% of **nuclear** fuel prices from the current 7% and introduce a fresh charge of 6,000 yen per kilogram, raising the effective tax rate to 13.5%.

TEPCO issued a statement that day, calling the ministry's approval "extremely regrettable" and saying it would closely analyze the ministry's judgment before deciding whether to file a lawsuit.

The prefectural government expects the tax hike to bring in some 4.5 billion yen in tax revenues a year.

19 novembre 2002 : les Japonais doutent de leur industrie nucléaire

Le nucléaire japonais dégringole de son piédestal. BY Par WERLY Richard.

Libération

LBRT

26**LA** Français

Liberation. Une publication de SNPC - France.Tel: 33 (1) 42 76 17 89http://www.liberation.fr.

La première compagnie d'électricité du pays avoue avoir falsifié les inspections de ses réacteurs depuis dix ans.

Tomioka, envoyé spécial. Planté devant sa camionnette, Koshiro Ichimaru branche ses haut-parleurs et entonne ses slogans antiatome. Le train en provenance de Tokyo décharge à la gare de Tomioka un nouveau lot d'experts nucléaires. Soigneusement garées, les limousines de Tepco (1), première compagnie électrique privée au monde par sa production, qui exploite les deux centrales voisines de la province de **Fukushima**, attendent ces émissaires venus du siège. «Il en arrive comme s'il en pleuvait», grommelle l'activiste antinucléaire dont la fourgonnette arbore le panneau: «Stop à l'atome, Stop aux mensonges». «Ils tentent de remettre de l'ordre dans ce foutoir. Leurs collègues locaux leur ont tellement menti qu'ils doivent tout revérifier.» Démissions. Excuses, mensonges, sanctions et démissions au sommet... Le lobby japonais de l'atome est bien mal en point depuis les révélations de Tepco fin août. La société d'électricité a reconnu avoir, pendant des années, bâclé les inspections des réacteurs de ses centrales de **Fukushima**, et falsifié ses rapports auprès de l'Agence nationale de sûreté **nucléaire** pour masquer des fissures, des problèmes de maintenance et son laxisme en matière de protection antiradiations. Son PDG, discrédité, a fini par démissionner. Les deux centrales, dotées chacune de six réacteurs, forment un sanctuaire au Japon, encadrant la baie de Tomioka comme les sentinelles de la fierté technologique nipponne. Plus de 30 % de l'électricité japonaise est actuellement d'origine **nucléaire**. Un chiffre applaudi en France par la Cogema qui fournit à Tepco l'assistance technique pour la construction de l'usine de retraitement de Rokkashomura, copie conforme de celle de La Hague (lire encadré) et très controversée. Mais, depuis quelques semaines, les dessous de ce «tour de force énergétique» commencent à apparaître.

Selon l'agence japonaise de sûreté **nucléaire**, 29 inspections de réacteurs auraient été tronquées ou falsifiées par Tepco depuis 1992. Dans seize cas, relève l'agence, la falsification des données est «inacceptable d'un point de vue social», manière de dire sans l'écrire que ces dissimulations d'informations représentaient un danger pour la population. Le grand déballage **nucléaire** s'est déjà soldé, outre la démission du PDG, par la mise à l'écart de 35 de ses directeurs et par la rétrogradation - sanction suprême au Japon - du patron des centrales, Tsuneo Futami. Le Premier ministre conservateur Koizumi, pas vraiment écolo, est même allé, le 30 septembre, jusqu'à intimer publiquement l'ordre à son ministre du Commerce et de l'Industrie Takeo Hiranuma «de tout faire pour rassurer la population et la réconcilier avec le **nucléaire**». «Jusqu'à maintenant, les tenants du **nucléaire** ont toujours mis en avant la fiabilité de leur technologie. Or, aujourd'hui, on voit que leurs fameux rapports étaient bidonnés», fulmine Koshiro Ichimaru, l'activiste de Tomioka. Nous sommes tous persuadés que la vérité est bien plus grave que ça...» Car il y a au Japon de quoi s'inquiéter: en septembre 1999, un accident **nucléaire** très grave, dû à une mauvaise manipulation d'uranium, a eu lieu à Tokaimura, dans la province d'Ibaraki, proche de **Fukushima**. Il s'était soldé par deux morts par irradiation, mais avait surtout démontré l'impréparation des autorités. Or les dissimulations de Tepco à Fushima montrent que les leçons de Tokaimura n'ont pas été retenues. «Ils nous ont menti, s'emporte Katsuya Endo, le maire de Tomioka. Cela fait trente ans qu'on vit avec le **nucléaire** mais là, la confiance est rompue.» Porte-à-porte. Ce qui n'empêche pas les sociétés d'électricité, citadelles du pouvoir industriel et technocratique au Japon, de continuer de porter sans ciller la bonne parole de l'atome: à Tomioka, les cadres de Tepco font ainsi, depuis le début du scandale, du porte-à-porte pour faire oublier leurs magouilles. Ils démarchent les riverains pour présenter leurs excuses et tenter de regagner leur confiance. Une méthode à laquelle recourent, d'ordinaire, les entreprises japonaises en difficulté. (1) Tokyo Electric Power Company. 10 compagnies régionales d'électricité se partagent le marché nippon.

11 décembre 2002 : publication du rapport sur les falsifications de TEPCO

Final Report Concerning Leak Tests on the Primary Containment Vessel at Fukushima Daiichi Station.

Japan Corporate News Network

JAPCOR

Tokyo, Japan, Dec. 11, 2002 - (JCN Newswire) - Tokyo Electric Power Co. (TEPCO) today submitted the final report concerning the problem of leak tests on the primary containment vessel at **Fukushima** Daiichi **Nuclear** Power Station Unit-1 to the Minister of Economy, Trade and Industry.

As soon as the suspicion had arisen that air was being injected into the primary containment vessel, TEPCO asked an outside team consisting of five independent expert lawyers to investigate the situation. The investigation lasted about two months and after its completion the team reported to TEPCO on its findings. TEPCO's report demonstrates its recognition of the findings of the investigation team, and describes the measures it will take in the future.

The conclusions of the investigation team are the same as those in the interim report issued on October 25:

1. It was confirmed that dishonest acts had taken place, including injecting air into the primary containment vessel in order to lower the leak rate while TEPCO's workers were involved in the 15th and 16th periodic inspections at **Fukushima** Daiichi Station's Unit-1.

2. Apart from the above-mentioned acts at **Fukushima** Daiichi Station's Unit-1 no dishonest practice was found in any other leak tests conducted in the past at any **nuclear** power plants.

TEPCO would like to express its sincere apologies, both to those in the vicinity of its **nuclear** power stations and to all members of society, for conducting dishonest practices during the government's regular **nuclear** safety inspections.

We, TEPCO, will make strenuous efforts to prevent reoccurrence of such errors and to regain public confidence in our company and in **nuclear** power. We will do this by creating "a system that will never allow workers to engage in dishonest practice" and "a climate in which workers will never engage in dishonest practice"

About Tokyo Electric Power Co., Inc.

Tokyo Electric Power Company, Incorporated (The) was established in 1951 and is Japan's largest electric power supplier. The company is based in the Tokyo metropolitan area and surrounding prefectures, operates one hundred and fifty seven hydroelectric power plants, twenty nine thermal power plants and three **nuclear** power plants and supplies electricity to about 23.2 million households and 2.8 million commercial and industrial customers. One of the world's largest electric utilities, TEPCO has a generating capacity of 57,800 MW, produced by fossil fuel (56%), **nuclear** (30%), and hydroelectric (14%) power sources. Seeking diversity in the face of a reduced monopoly status caused by deregulation, TEPCO is moving into communications. It owns a major stake in Tokyo Telecommunication Network (TTNet, local and long-distance phone service). TEPCO is in a telecommunications joint venture with nine other Japanese electric companies.

Source: Tokyo Electric Power Co., Inc.

26 décembre 2002 : le gouvernement accepte l'augmentation de la taxe nucléaire dans la préféceture du Fukushima

JAPAN'S TEPCO ACCEPTS 90% NUCLEAR FUEL TAX HIKE IN FUKUSHIMA.

Asia Pulse

APULSE

TOKYO, Dec 26, Asia Pulse - Tokyo Electric Power Co. (TSE:9501) has accepted a **Fukushima** prefectural ordinance raising the **nuclear** fuel tax rate from the current 7 per cent to 13.5 per cent.

The decision was made at a meeting between Tepco President Tsunehisa Katsumata and **Fukushima** Prefecture Governor Eisaku Sato.

"I'd like to implement the tax hike by the end of the year," Sato said.

The previous tax rate expired Nov. 10, and the new one will take effect Friday or Tuesday.

The **Fukushima** prefectural legislature passed the law in July, imposing the higher tax for five years. The ordinance is expected to raise 23 billion yen (US$192 million) over the five years, of which about 9 billion yen will be coming from Tepco.

"I'm concerned that other prefectures may follow suit" in raising the tax, Katsumata said, adding that "we had to accept the ordinance" because Home Affairs Minister Toranosuke Katayama had signed off on it.

The new tax rate compares with the 10 per cent imposed in Fukui Prefecture and the 9 per cent in Niigata Prefecture, where **nuclear** power plants are concentrated.

(Nikkei).

15 janvier 2003 : la préfecture de Fukushima ne sait pas si TEPCO va relancer ses réacteurs

PLATTS - Fukushima prefecture unsure on TEPCO nuke units restart.

Platts Commodity News

PLATT

Tokyo (Platts)-14Jan2003/926 pm EST/226 GMT Japan's **Fukushima** government has no definite ideas yet as to how and when Tokyo Electric Power Co might be able to restart its **nuclear** power units in the prefecture, as it has not ascertained public views on the matter, a government official said Wednesday. Seven of TEPCO's ten **nuclear** power units in **Fukushima** were shut for inspections and maintenance after the eruption of Japan's **nuclear** safety data cover-up scandal in August 2002. The ten units, distributed over two **nuclear** plants, have a combined power generation capacity of 1.1-mil kilowatts. "We need more efforts to recover [public] trust in TEPCO," the government official said. A 1.1-mil kW unit at the **Fukushima**-2 plant will be technically ready for restart in March, but TEPCO has yet to receive approval from the government and **Fukushima** residents.

16 janvier 2003 : de nouvelles fissures découvertes sur deux réacteurs

Tokyo Electric Finds Fresh Cracks in N-Reactors.

Jiji Press English News Service

JIJI

Tokyo, Jan. 16 (Jiji Press) - Tokyo Electric Power Co. said Thursday it has found 20 previously undetected cracks in two **nuclear** reactors at the **Fukushima** No. 2 plant in northeastern Japan.

The cracks were found in the shrouds that cover reactor cores, during checks made in the wake of last August's revelation that the company had falsified reactor inspection data.

One of the cracks in a 50-millimeter-thick shroud was 23 millimeters deep, Tokyo Electric said.

The company will conduct further close examination of the cracks to establish their cause. Tokyo Electric began to suspend operations at **nuclear** reactors last September and has been conducting its checks since.

10 février 2003 : TEPCO envisage de redémarrer trois réacteurs fin mars

RIM CRUDE NO.2063 MARKET NEWS - Japan TEPCO to restart 3 nuclear power re actors in late March.

Rim Crude Intelligence Daily

RIMCRD**NGC** Rim Intelligence (English)**GC** CTGRME

RIM Tokyo February 10, 2003 11:18 AM (Tokyo local time)

Tokyo Electric Power Co plans in late March to restart three of its 17 n uclear reactors following regular inspections and maintenance, a company spokes man said Monday. The three units are a 784,000kWh No3 unit at the **Fukushima** Dai - ichi power plant, 1.1-mil kWh No1 unit located at the **Fukushima** Dai-ni plant, and 1.356-mil kWh No 6 reactor at the Kashiwazaki site. "We should be able to r esume operations of the three reactors unless any mechanical trouble were found," the spokesman noted. At present, TEPCO kept its 12 **nuclear** reactors off line to conduct planned and unplanned checkups.

PLATTS - Japan TEPCO hopes to restart two nuke power units in Mar.

10 février 2003

Platts Commodity News

PLATT

Tokyo (Platts)-10Feb2003/334 am EST/834 GMT Japan's Tokyo Electric Power Co hopes to restart two **nuclear** power generation units in **Fukushima** and Niigata prefectures if the residents in areas around the plants give the go-ahead, TEPCO said Monday. One of the units is the 0.784-mil kW Unit 3 at **Fukushima** I plant in **Fukushima** prefecture which was shut Jul 18 last year. The other is the 1.356-mil kW Kashiwazaki Kariwa Unit 6 in Niigata prefecture, down since Jan 27 this year. TEPCO said it would complete its routine maintenance on both units by the end of March. A TEPCO executive said over the weekend that the restart of the units totally depended on the residents' approval. Meanwhile, TEPCO is scheduled to shut its **Fukushima** I Unit 5 on Feb 11, its 13th **nuclear** unit to go down. By Apr 15, it is scheduled to shut all of its 17 units for check-ups.

14 février 2003 : TEPCO envisage d'arrêter tous ses réacteurs en avril pour des vérifications de sécurité

Tepco Plans Shutdown Of All Its Nuclear Units By Apr 15

Dow Jones Energy Service

NRG

SINGAPORE -(Dow Jones)- Tokyo Electric Power Co. (J.TER), or Tepco, Japan's largest power utility, is planning to shut down the remaining four of its 17 **nuclear** power units by April 15 for safety inspections, a company spokeswoman said Thursday.

Tepco has to shut down its three **nuclear** power complexes - **Fukushima** Daiichi, Kashiwazaki-Kariwa and **Fukushima** Daini - for inspection after it was found to have falsified its plant safety records last year.

Its **Fukushima** Daiichi **nuclear** power complex has a total of six units, all of which have been shut down except two. The 784-megawatt **Fukushima** Daiichi No. 2 unit is scheduled to be shut down March 31 and the 1,100-MW No. 6 unit April 15.

The Kashiwazaki-Kariwa complex houses a total of seven units, with five of the units still being inspected and the remaining two scheduled for inspections. Inspection of the 1,100-MW Kashiwazaki-Kariwa No. 5 unit is set to begin March 1 and the 1,356-MW No. 7 unit March 29.

Tepco's **Fukushima** Daini complex has a total of four units, with two units - together with one unit each from the other two complexes - in the final phase of testing, as the Japanese government is hoping to avoid a total **nuclear** power blackout.

Tests for the 1,100-MW **Fukushima** Daini No. 3 unit are to be completed March 17 and the 1,100-MW No. 1 unit March 23. The 1,356-MW Kashiwazaki-Kariwa No. 6 unit will complete tests March 30, and tests on the 784-MW **Fukushima** Daiichi No. 3 unit will be completed sometime in March.

"The Daiichi No. 3 unit has been shut since July 1 because of false safety records. The unit inspection has taken more than the usual 130 days, but the government had said the inspection for

that unit is in the final phase," the spokeswoman said.

No restart dates have been scheduled yet for these four **nuclear** units, she said.

"The approval for restart from the local governments may take several weeks...The local governments will have to examine the test results," the spokeswoman said.

Although Tepco will complete the operational tests on four units in March, the earliest possible startup dates for these units are in May, she said.

However, some fuel oil traders are expecting startup of the four units in June to July, possibly extending the anticipated stronger fuel oil demand for a few more months.

-By Edgar Ang, Dow Jones Newswires; +65-64154065; edgar.ang@dowjones.com

18 février 2003 : TEPCO est incapable de préciser la date de redémarrage de ses réacteurs

TEPCO unable to say when Fukushima N-plant to resume operation.

Japan Energy Scan

JPES

0

FUKUSHIMA, Japan, Feb. 12 Kyodo

Tokyo Electric Power Co. (TEPCO) is not in a position to say when it can resume operations of its No. 1 and No. 2 **Fukushima nuclear** power stations, the head of the company's local office said Wednesday.

TEPCO will not resume operations "simply because (the suspension of operations) makes it difficult to meet summer demand for power," Kiyokazu Sano said at a press conference.

Plant operations have been suspended since last August when the company was found to have falsified records regarding reactor cracks.

"I don't think local concern and distrust have been wiped out yet," Sano added.

24 février 2003 : le gouvernement impose à TEPCO d'améliorer ses procédures de sécurité

TEPCO ordered to improve safety measures at 3 plants.

Japan Energy Scan

JPES

0

TOKYO, Feb. 24 Kyodo

The government's **nuclear** inspection agency said Monday it has ordered Tokyo Electric Power Co. (TEPCO) to correct flaws in its safety measures for three **nuclear** plants in a recent damage cover-up scandal.

The Industrial and **Nuclear** Safety Agency said it found problems with the largest Japanese utility's measures to ensure compliance with its own safety regulations and with those to guarantee the quality of its safety management mechanisms.

The agency, a unit of the Ministry of Economy, Trade and Industry, conducted seven-week special inspections in November and December at the firm's **Fukushima** No. 1 and No. 2 plants in **Fukushima** Prefecture and the Kashiwazaki-Kariwa plant in Niigata Prefecture.

The intensive inspections were conducted following revelations last August that TEPCO covered up cracks in core shrouds at a number of reactors at the plants.

The agency cited three problem areas in the utility's safety rules. They include how TEPCO deals with documents on repairs, and confusion over the responsibility of division and group chiefs.

The agency also said it has found minor problems that need to be addressed concerning safety measures at plants run by Tohoku Electric Power Co., Kansai Electric Power Co. and Chugoku Electric Power Co. during inspections between October and December last year.

The problems include improper details in plant operation manuals and they concern Tohoku's Onagawa plant in Miyagi Prefecture, Kansai's Mihama plant in Fukui Prefecture and Chugoku's Shimane plant in Shimane Prefecture, it said.

6 mars 2003 : craintes de pénurie d'électricité en raison de la fermeture de 17 réacteurs

Shutdown of 17 nuclear reactors raises summer outage fears.

Kyodo News

KYODO

The imminent shutdown of all 17 **nuclear** reactors run by Japan's largest utility, Tokyo Electric Power Co. (TEPCO), is raising fears of power cuts in the summer and prompting TEPCO to urge consumers to save electricity, TEPCO officials say.

The possible shutdown of all the reactors, located in Niigata and **Fukushima** prefectures, by mid-April follows revelations last August that TEPCO falsified safety reports to cover up defects at its **nuclear** facilities.

According to the company, the possible outages as a result of shutting down the reactors for safety checkups will affect customers in Tokyo and eight other prefectures.

The 17 reactors, which generate a total of 17 million kilowatts, have been supplying electricity for these areas, providing more than 40% for Tokyo and its vicinity.

TEPCO said it has sought public cooperation on the need to save on electricity by placing newspaper ads on Feb. 26.

Since the cover-up scandal in late August, TEPCO has closed down 14 of the 17 reactors for checkups in a bid to restore the confidence of local residents. Operations at the remaining three reactors will be suspended by the middle of next month.

According to TEPCO, power supply demands could still be met up to May, but it will be difficult to do so in the summer from June to early September. As of late last month, TEPCO said it can supply an average of 51 million kw in power generation capacity.

It said that in July and August, when electricity use peaks, demand will surge beyond 60 million kw.

The 17 **nuclear** reactors belong to the **Fukushima** No. 1 **nuclear** power station and **Fukushima** No. 2 **nuclear** power station, both in **Fukushima** Prefecture, and the Kashiwazaki-Kariwa **nuclear** power station in Niigata Prefecture.

Fukushima Gov. Eisaku Sato said that now is not the time to consider resuming operations, while Niigata Gov. Ikuo Hirayama said the central government should ensure the safety of **nuclear** reactors, adding he is worried that limiting power supplies could worsen the recession.

Kashiwazaki Mayor Masazumi Saikawa expressed his approval of operations at the reactors resuming after problems are resolved, and even residents in Niigata and **Fukushima**, which are being supplied by Tohoku Electric Power Co. based in Miyagi Prefecture, are calling for resumed operations, partly out of concern about local employment.

In late August, it was revealed that during the 1980s and 1990s TEPCO falsified safety reports and covered up defects found during safety checks at the two **Fukushima** power stations and the Kashiwazaki-Kariwa power station.

The **Fukushima** No. 1 station has six reactors, the **Fukushima** No. 2 station has four reactors, and Kashiwazaki-Kariwa station has seven reactors.

11 mars 2003 : le gouvernement autorise, sous conditions, le rédémarrage des réacteurs

Govt OKs Conditional Restart Of Tepco Nuclear Reactors

Nikkei Report

NKRP

TOKYO (Nikkei)--A government agency on Monday compiled a report that will eventually allow Tokyo Electric Power Co. (9501) to resume operating **nuclear** reactors shut down in the wake of its inspection data falsification scandal.

But the report -- compiled by the Ministry of Economy, Trade and Industry's **Nuclear** and Industry Safety Agency -- is also asking the utility to inspect five of the 17 reactors again under a new method to be worked out by May. This will make it almost impossible to resume operating all of them right away.

It is also unclear whether the prefectural authorities of Niigata and **Fukushima**, which are home to Tepco **nuclear** plants, will approve of the resumption of their operations, casting into doubt Tepco's ability to meet peak power demand during the summer.

The agency has determined that six of the seven reactors with cracks in their core shrouds could be operated safely without repairs for the next five years. But it is also asking Tepco to reinspect five of those six with an ultrasonic method because they have been found to have cracks not only in shrouds, but also in pipes in their recirculation systems. For this reason, these reactors are not expected to resume operations until June at the earliest.

Depending on inspection results, the company may need to replace or repair parts in these reactors. This would further delay the restart of operations.

Tepco will brief the residents and authorities of the areas hosting these plants on the agency's report, the progress of its own inspections and a set of measures designed to prevent future data falsification. It will also compile this month a timetable for repairing the reactors for resumption of operations.

Tepco has been producing power in amounts sufficient to meet winter demand, estimated to peak at 54 million kilowatts. But summer demand once spiked to 64.3 million kilowatts, and the firm needs to boost supply by roughly 10 million kilowatts to prepare for summer demand. Ten of the company's 17 reactors have an output of 1.1 million kilowatts each. This means that the utility will have to resume operating nine to 10 reactors by summer.

But there is no guarantee that Tepco can convince local residents and authorities that their reactors will be ready to resume operations by that time.

Fukushima Governor Eisaku Sato is often heard voicing his doubts about such resumption.

"Tepco has not regained the trust of local residents to the extent that it can begin to discuss resuming the operation of its **nuclear** reactors," Sato said.

"I would like to make a final decision after reviewing Tepco's briefing and local residents' reactions to it," Niigata Governor Ikuo Hirayama said.

"It seems like both the central government and Tepco are rushing things, but they need to take care not to let this backfire on them in trying to gain understanding from local residents" on the matter, said Masazumi Saikawa, mayor of Kashiwazaki in Niigata Prefecture.

(The Nihon Keizai Shimbun Tuesday morning edition)

12 mars 2003 : TEPCO publie son plan de remise en état de ses réacteurs

Tepco Discloses Plan For Fixing Damaged Reactors

Nikkei Report

NKRP

TOKYO (Nikkei)--Tokyo Electric Power Co. (9501) on Tuesday made public its plan for repairing cracked shrouds and recirculation plumbing in its **nuclear** power reactors.

The utility's basic approach will be to remove the cracks from the shrouds and to remove the cracked portions of the recirculation piping. A more sophisticated plan will be worked out for the No. 2 reactor at the **Fukushima** No. 2 power plant, where the cracking was more complex.

Later this month, the firm plans to brief residents in areas near the affected power plants on its plans for repairs and preventing a recurrence of inspection data falsification. To date, Tepco has discovered cracks in the shrouds and recirculation plumbing of seven reactors.

On Monday, the Ministry of Economy, Trade and Industry's **Nuclear** and Industrial Safety Agency released a report saying it sees no problem that should prevent the restart of operations at the reactors in which cracks were found, except for the No. 2 reactor at the **Fukushima** No. 2 plant.

The report did say there was a problem with the method used for inspecting the recirculation plumbing. It said inspections should be conducted again with a new method, and that piping should be replaced.

Repairs are expected to take several months. Tepco wants to repair the reactors so that it can resume operating them by summer, one company executive said.

(The Nihon Keizai Shimbun Wednesday morning edition)

14 avril 2003 : l'arrêt de tous les réacteurs de TEPCO fait craindre des coupures d'électricité

Japan faces acute power shortage as TEPCO shuts down all reactors

Agence France-Presse

AFPR

TOKYO, April 14 (AFP) - Japan will face an acute electricity shortage in the summer as power giant Tokyo Electric Power (TEPCO) said Monday it would this week complete the shutdown of all

its 17 **nuclear** reactors for inspection.

TEPCO, the world's largest private power utility, said it would on Tuesday stop operations at its last running **nuclear** reactor in **Fukushima**, 200 kilometres (125 miles) northeast of Tokyo.

"We will close the last reactor on April 15. After tomorrow, all the 17 reactors stop running," said Mamoru Shirakashi, a TEPCO spokesman.

TEPCO has shut down 16 **nuclear** reactors since September to take responsibility for a fuel leak incident in that month and a damaging data falsifying scandal in October.

The closure of the last running reactor is due to the fuel leak incident in which the company detected a small amount of radioactive substance at a plant in **Fukushima**.

No radiation leakage was found beyond the premises of the plant.

The government, plant makers such as Toshiba and Hitachi, and TEPCO's own in-house team are inspecting the reactors, but TEPCO said it had no timetable for starting **nuclear** energy operations again.

"We don't know how long the inspection will last. At this moment, we don't know when to resume our operations," the spokesman said.

TEPCO expects demand for energy will reach some 60 million kilowatts this summer and warns if the 17 reactors remain shut, Japan will face a serious energy shortage.

"We will have a severe energy shortfall," Shirakashi said, adding that TEPCO should run at least 10 **nuclear** reactors to meet demand in the summer.

If the 17 reactors remain closed, TEPCO would use thermal power generation and have to import electricity from other power companies.

"But these measures are not enough to meet the expected energy demand in the summer," the spokesman said.

To seek local support for the resumption of **nuclear** reactors, TEPCO executives are holding a series of meetings with local lawmakers and neighbours.

"We would very much like to start operations again," the spokesman said.

TEPCO has seven **nuclear** reactors at its Kashiwazaki-Kariwa **nuclear** plant in Niigata, 250 kilometres (155 miles) north of Tokyo, and runs six reactors at **Fukushima** Number One plant and four reactors at **Fukushima** Number Two plant.

The governors of Niigata and **Fukushima** must give their approval for the resumption of **nuclear** reactors, as must the central government.

Japan plans to raise its **nuclear** reliance, from providing 35 percent of the nation's power in 2001 to 42 percent in 2010. Germany, by contrast, plans to eliminate all **nuclear** power plants by 2020.

TEPCO's all nuclear reactors suspended+.

15 avril 2003

Organisation of Asia-Pacific News Agencies

OANA

TOKYO, April 15 Kyodo -

Tokyo Electric Power Co. (TEPCO) shut down a **nuclear** reactor in **Fukushima** Prefecture around midnight Monday, meaning all 17 of its atomic power reactors have been suspended for safety checks after scandals last summer involving the cover-up of defects.

With the halt of all its **nuclear** reactors, TEPCO lost 17.38 megawatts, or about 30%, of its power generation capacity.

Should the suspension continue, the utility will fall short of power generation in midsummer by up to 9.5 mws, which could result in a serious power shortage in the Kanto region centering on Tokyo.

It is the first time for TEPCO to shut down all of its **nuclear** power reactors since January 1976 when it had two reactors.

TEPCO started lowering output at its No. 6 reactor at **Fukushima** No. 1 **Nuclear** Power Station in the afternoon and suspended power generation around midnight Monday, company officials said.

Japan's largest power company was forced to suspend operations at the reactors for safety checkups following revelations last summer that it falsified safety reports to cover up defects at the reactors.

TEPCO President Tsunehisa Katsumata said in a statement, "We take it seriously that an unprecedented situation occurred due to a series of scandals."

Katsumata pledged to give priority to ensuring the operational safety of the reactors, and carry out inspections and repairs in a steady manner.

Although TEPCO will try to ensure a sufficient energy supply by asking other power companies for support and boosting its thermal power generation, such measures are seen as insufficient.

Katsumata said the power firm needs to resume operations at around 10 reactors to meet demand for power supply in the summer.

It is now a pressing task for TEPCO to win approval from local residents and local governments for the resumption of operations at the reactors.

Of the suspended reactors, TEPCO hopes it will resume operations at No. 6 reactor in Kashiwazaki-Kariwa **Nuclear** Power Station in Niigata Prefecture as early as this month.

In **Fukushima** Prefecture, TEPCO and the **Nuclear** and Industrial Safety Agency have already explained safety measures to local residents and four local town governments, and the four towns are expected to discuss the matter on Friday.

It is still unclear, however, whether TEPCO will be able to resume operations at the reactor as **Fukushima** Gov. Eisaku Sato has remained cautious of the plan. ==Kyodo 2003-04-15 00:58:21.

29 mai 2003 : TEPCO attend l'autorisation de redémarrer son réacteur n°6

Tepco Awaits Approval To Restart Fukushima Nuclear Plant

Dow Jones International News

DJI

TOKYO -(Dow Jones)- Tokyo Electric Power Co. (J.TER or 9501), or Tepco, is awaiting approval from the **Fukushima** prefectural government to restart its No. 6 **nuclear** reactor at the **Fukushima** Dai-ichi Power Station.

Tepco Wednesday completed inspections and maintenance at the 1.1 million-kilowatt reactor, which could technically be resumed for commercial operation any time, a spokesman at Tokyo Electric said Thursday.

"We are expecting the prefectural government to visit our **Fukushima** Dai-ichi power station over the next several days to see if resumption of the reactor is safe," the spokesman added.

The **Nuclear** and Industrial Safety Agency, under the Japan's Ministry of Economy, Trade and Industry, has confirmed Tepco's inspection for the No. 6 reactor was conducted properly, suggesting resumption of the plant would be safe.

Tepco shut the No. 6 reactor April 15 to carry out an inspection following the discovery last August that the company covered up reactor defects.

As of Thursday, 16 of Tepco's 17 **nuclear** reactors are idle for inspections.

Tepco will likely resume in mid-June operations at its No. 7 **nuclear** reactor at the Kashiwazaki-Kariwa power station in Niigata Prefecture.

The company shut the 1.35 million-kilowatt No. 7 reactor March 28 for checkups, while it is expecting to complete inspections by early June.

The Niigata Prefecture government official recently said approval would be granted to Tepco for resumption of the reactor if it could be reassured that the plant is safe to operate.

May 7, Tepco resumed operations of the No. 6 reactor at the Kashiwazaki-Kariwa power station. The No. 6 reactor was the first to be restarted since the company shut all 17 of its units for inspections.

By mid-June, Tepco, the country's largest power company, is expected to operate three of its 17 **nuclear** reactors ahead of the summer peak demand season, which begins in late June.

But Tepco in early May said it needed to resume operating at least eight to ten **nuclear** reactors to supply enough electricity to meet growing demand in the Tokyo metropolitan area in the summer.

The company expects the Tokyo area's peak power demand to reach 64.5 million kilowatts in July, compared with an estimated peak demand of 46.5 million kilowatts for May.

-By Shigeru Sato, Dow Jones Newswires; 813-5255-2929; Shigeru.Sato@dowjones.com;

-Edited by Nick Vonklock and George Bernard

TEPCO reactor passes check, waiting for restart.

5 juin 2003

Reuters News

LBA

TOKYO, June 5 (Reuters) - Tokyo Electric Power Co (TEPCO) (9501.T) said on Thursday one of its **nuclear** reactors has passed a final test and was ready to start operating, although no restart date had been set.

A spokesman at TEPCO said the company had completed a leak test at the Kashiwazaki Kariwa No.7 reactor in Niigata prefecture, northwest of Tokyo.

"The test confirmed that the reactor met the necessary standard," the spokesman said.

Another TEPCO reactor - the **Fukushima** Dai-ichi plant's No.6 reactor in **Fukushima** Prefecture, north of Tokyo - passed a final test in late May and is also ready for restart.

TEPCO, the world's largest investor-owned power utility, began closing its **nuclear** reactors from September last year after revelations it had falsified data on previous maintenance checks.

In early May, TEPCO restarted the Kashiwazaki Kariwa No.6 reactor. But TEPCO's other 16 **nuclear** reactors remain shut.

TEPCO, sensitive to public distrust of the **nuclear** industry after a series of mishaps and accidents, has said it would seek local approval before restarting the reactors

TEPCO and government authorities have said that Tokyo and the surrounding area serviced by the utility could suffer a power shortage this summer if more **nuclear** reactors are not restarted.

TEPCO has said it would need to have eight to 10 **nuclear** reactors running to meet peak summer demand.

16 juin 2003 : découverte d'une pièce manquante sur le réacteur n°3

Tepco Finds Fuel Rod Missing At Fukushima Nuclear Reactor

Dow Jones International News

DJI

TOKYO -(Dow Jones)- Tokyo Electric Power Co. (J.TER or 9501) said Sunday it discovered a fuel control rod was missing at its No. 3 **nuclear** reactor, which is currently idle for inspection.

Immediately after realizing the rod was missing, Tepco urgently halted part of its inspection work and inserted a rod into the reactor, located at the **Fukushima** Dai-Ni Power Station, the company said in a statement.

The No. 3 reactor has been shut Dec. 10 last year for inspection and maintenance.

The cause of the missing rod hasn't been determined, but Tepco has started an investigation.

Commenting on whether the incident will force Tepco to extend the shutdown of the No. 3 reactor, a company spokesman said: "We haven't measured the impact to our reactor inspection yet from the missing rod."

"At this moment, we are unable to decide when we can complete our inspections at the unit."

Local industry sources earlier this month expected the No. 3 reactor to be restarted by the end of the month.

The incident could delay approval from local authorities to resume operations at the No. 3 reactor. Residents of the **Fukushima** Prefecture have previously expressed skepticism about the safety of **nuclear** power plant operations.

By the end of June, Tepco needs to restart at least eight **nuclear** power reactors to supply enough electricity to the Tokyo metropolitan area, as the peak summer demand traditionally kicks in July through August, the company said in its supply-demand forecast report early June.

As of Monday, 16 of its 17 **nuclear** reactors were idle for inspections following the discovery last August that the company had covered up reactor cracks.

May 7, Tepco restarted its No. 6 reactor, the 1.35 million-kilowatt unit at the Kashiwazaki-Kariwa Power Station in Niigata Prefecture, northern Japan, after it received a green light from local authorities to resume operations.

Several domestic industry sources are, meanwhile, expecting the Niigata Prefectural government to give the go-ahead this week to Tepco to restart its No. 7 reactor.

According to Tepco's projection made earlier this month, electricity demand in the Tokyo area will grow 24.5% to 61 million KW in July from its projected figure of 49 million KW for June.

Tepco's maximum electricity supply in July and August will be 57 million KW if the 16 reactors remain shut, the company said.

-By Shigeru Sato, Dow Jones Newswires; 813-5255-2929; Shigeru.Sato@dowjones.com;

-Edited by Hilary Mc Cully

10 juillet 2003 : le gouverneur de Fukushima autorise le redémarrage du réacteur n°6

Fukushima gov. gives OK to restart reactor.

Kyodo News

KYODO

[MISCELLANEOUS]

Fukushima Gov. Eisaku Sato gave his consent Thursday for restarting a reactor at the Tokyo

Electric Power Co. (TEPCO) **nuclear** power plant in **Fukushima** Prefecture, which has been shut down with other TEPCO reactors because of a defect cover-up scandal.

Sato gave the go-ahead for restarting the No. 6 reactor at the plant after a meeting with TEPCO President Tsunehisa Katsumata, who visited the governor to seek his consent, prefectural officials said.

TEPCO relance un 3ème réacteur pour éviter les coupures électriques à Tokyo.

10 juillet 2003

Agence France Presse

AFPFRLA Français

TOKYO, 11 juil (AFP) - La première compagnie privée d'électricité du monde, Tokyo Electric Power Company (TEPCO), va bientôt relancer un troisième réacteur **nucléaire** afin d'éviter le risque des coupures d'électricité durant l'été dans la région de Tokyo.

TEPCO redémarrera le réacteur No 6 de la centrale de **Fukushima**, d'une capacité de 1,1 mégawatts et située au nord de Tokyo, a indiqué jeudi la compagnie après avoir reçu l'aval des autorités locales.

Selon l'agence de presse japonaise Jiji, le réacteur pourrait repartir dès jeudi soir.

Toutefois, 14 autres réacteurs sont toujours stoppés pour des raisons de sécurité.

TEPCO avait dû fermer entre septembre et avril toutes ses centrales pour inspection, après la découverte de falsifications de rapports de sécurité faisant état de fissures depuis la fin des années 1980.

Elle en a déjà remis deux en fonction en mai et juin.

Un quatrième réacteur pourrait être relancé vendredi dans la préfecture de Niigata (nord-ouest de Tokyo).

Selon TEPCO, il faudrait remettre en activité au moins 10 réacteurs pour éviter que des millions de foyers ne soient privés d'électricité - et donc d'air conditionné-pendant l'accablante canicule estivale.

mis-agr/nl tf.

18 août 2003 : redémarrage du réacteur n°3

TEPCO restarts nuclear reactor in Fukushima.
Japan Energy Scan
JPES
0

FUKUSHIMA, Japan, Aug. 13 Kyodo

Tokyo Electric Power Co. (TEPCO) on Wednesday reactivated the No. 3 reactor at its **Fukushima**

No. 1 **nuclear** power plant after it was shut down for regular checks and safety inspections amid revelations last year that the utility falsified safety reports.

The reactivation followed an endorsement by **Fukushima** Gov. Eisaku Sato on Tuesday during a meeting with TEPCO President Tsunehisa Katsumata.

The reactor, which has a generating capacity of 784 megawatts, is expected to start producing electricity on Friday and reach full output around Monday.

After the falsification scandal developed last August, TEPCO shut down all 17 of its reactors in Niigata and **Fukushima** prefectures by the end of April. The resumption of the No. 3 reactor follows four other reactors -- one in **Fukushima** and three in Niigata.

TEPCO has already replaced defective equipment in the No. 3 reactor including a cracked shroud.

On July 18, the government's **Nuclear** and Industrial Safety Agency declared the reactor safe. TEPCO shut it down a year ago.

But the **Fukushima** prefectural government did an independent check of the reactor even after the assurance due to concerns among local residents and resentment toward TEPCO over the scandal.

25 septembre 2003 : un travailleur de la centrale exposé à des radiations

Japan Nuclear Pwr Plant Worker Exposed To Some Radiation
Dow Jones International News
DJI

TOKYO (AP)--A worker at a **nuclear** power plant in northern Japan was exposed to a small amount of radiation while fixing a radioactive leak in its cooling system, the plant's operator said Thursday.

The worker at the reactor in Japan's northeast **Fukushima** prefecture (state) wasn't injured by the exposure, which occurred on Wednesday, said operator Tokyo Electric Power Co. (J.TER or 9501). The worker's identity wasn't disclosed.

The worker was fixing a leak in the primary water cooling system in a reactor at the **Fukushima** No. 1 **Nuclear** Power Plant. He was immediately treated, and the amount of radiation exposure was believed small enough not to cause any health threat, said Tepco spokesman Mamoru Shirakashi.

The **Fukushima** plant was one of 17 **nuclear** reactors closed for safety inspections after the company last year admitted to covering up structural problems from a decade ago.

The reactor was reopened two weeks ago and was running at a low output. It was to return to full capacity next month.

Shirakashi said Wednesday's mishap wasn't related to the problems involving the cover-up. About one liter (2.1 pints) of radioactive water leaked from a loosened valve attached to the primary cooling system, and the worker was fixing the problem when exposed to radiation, he said.

The company's **nuclear** reactors generate about 40% of the electricity consumed by Tokyo and several surrounding prefectures (states).

Resource-poor Japan relies on **nuclear** power for 30% of its electricity.

-Edited by Genevieve I. Soledad

26 septembre 2003 : inquiétudes sur la résistance des centrales nucléaires après un important tremblement de terre

Major Earthquake Revives Concerns over Resilience of Energy Infrastucture BY Mike Hurle

WMRC Daily Analysis

WDAN

WMRC Perspective
Significance The refinery fire was the most high-profile incident resulting from the tremor, which injured hundreds of people but apparently caused no fatalities.
Implications In the past week **Japan** has conducted a series of emergency drills that are designed to prepare the population for a serious quake. A major concern surrounds the possible damage that could be caused to **nuclear** plants, gas pipelines and refineries.
Outlook **Japan** spends billions of yen on ensuring key buildings and infrastructure are reinforced to necessary standards, but a major earthquake in a populated area would still cause huge loss of life and major disruption to energy facilities and power supplies.

Hokkaido Gets the Shakes

Early this morning Hokkaido island in northern **Japan** witnessed one of the strongest earthquakes to hit the country in the past ten years. The tremors reached between 7.8 and 8.0 on the Richter scale, slightly stronger than the 1995 quake at Kobe near Osaka, which killed 6,400 people. Fortunately, the latest quake does not yet appear to have caused any fatalities, with the epicentre far from any major population centres. Nevertheless, 41,000 people in central and eastern Hokkaido were evacuated from their homes, following concerns of repeat tremors and **tsunami** tidal waves, while the 700MW Tomato Atsuma power station was automatically shut down, leaving thousands of households without power. The most high-profile consequence of the earthquake was a fire at the 140,000-bpd Tomakomai refinery, operated by Idemitsu Kosan. Nippon Oil also closed its 16,000-bpd Muroran refinery.

Tokyo Could be Next

The earthquake comes as seismologists warn that the capital Tokyo is long overdue for a major earthquake of its own. In the past week the city's inhabitants have marked the eightieth anniversary of the great 1923 Kanto earthquake with a series of emergency drills, which have mobilised emergency volunteer groups and helped to sustain the public's awareness of the seriousness of the threat. The main danger to life will come from electrical and gas-related fires, particularly in areas with a high proportion of wooden buildings. The fire at the Hokkaido refinery has, however, raised concerns over the **risks** evident at larger energy installations. In the past year **Japan**'s energy sector

has been hit by a series of scandals over safety inspections, firstly at **nuclear** power plants and more recently at two Nippon Oil refineries (see **Japan**: 2 September 2002 Reporting Scandal Forces Resignation of TEPCO Executives and **Japan**: 5 August 2003: Safety Scandal Forces Closure of Japanese Refineries). Although all industrial facilities in **Japan** are built to rigorous quake-proof specifications, the danger posed by earthquakes underlines the importance of regular, comprehensive and transparent safety reviews.

Outlook and Implications

Japan has learned many lessons from the Kobe quake, when supposedly quake-proof structures including elevated highways failed to hold up. Although fires and loss of life are inevitable, authorities in Tokyo are confident that they have the resources and organisation to tackle and compartmentalise problems when 'the big one' strikes. Energy companies have well-drafted procedures for coping with the aftermath of such a disaster, which would typically involve routine closure of power and refining facilities. Despite the high level of overall preparation and public awareness, concerns over the **nuclear** industry continue to surface, reflecting a lack of confidence in the management of plants and their ability to prevent some further accident occurring.

WMRC Contact Mike Hurle (mike.hurle@wmrc.com)

18 novembre 2003 : l'IEA recommande au Japon de restaurer la confiance du public dans l'industrie nucléaire

IEA urges Japan to restore public confidence in nuclear energy.
Kyodo News
KYODO

The International Energy Agency (IEA) urged Japan on Tuesday to restore public confidence in **nuclear** energy if the country wants to meet its target of a 30% increase in **nuclear** power generation by 2010.

The Paris-based IEA also said in an energy policy report on Japan, issued every four years, that Japan should clarify the role of **nuclear** power amid growing liberalization in the nation's electricity sector and the heavy reliance on Middle East oil imports.

"It is important for Japan to improve public acceptance of **nuclear** energy as a way to ensure stable energy supply and mitigate climate change," IEA Executive Director Claude Mandil said in releasing the report, "Energy Policies of IEA countries - Japan 2003 Review."

Nearly 90% of Japan's oil imports come from the Middle East.

Mandil said it will take some time to restore public confidence in **nuclear** power because of the outcry over the cover-up by Tokyo Electric Power Co. (TEPCO) of reactor defects.

Currently, 12 of TEPCO's 17 **nuclear** reactors in Niigata and **Fukushima** prefectures have suspended operations for safety check.

TEPCO says it wants to resume operating the 12 reactors as early as possible, but government officials said it may take some time before the government and TEPCO win support from local residents.

Mandil, on a four-day visit to Tokyo through Wednesday, called on the Japanese government to

boost transparency in **nuclear** administration and impose stronger rules as well as stricter punishments for violators.

Mandil called for further liberalization in Japan's electricity and gas markets, saying energy prices in Japan remain one of the highest among the 26 member countries of the IEA, which coordinates energy policy for the world's MAJOR energy consumers.

The report says that new entrants find it difficult to enter the electricity market and little competition seems to have developed between major companies with a dominant share in the market, such as TEPCO and Kansai Electric Power Co.

"Given the slow entry rate of new players, greater competition between the incumbents is essential," the report says, citing the need to set up a "neutral transmission organization" to supervise the equal use of electricity transmission networks by major utility companies and new entrants.

Currently, transmission networks are owned by major electricity firms, making it virtually impossible for new players to start electricity transmission businesses.

"If competition fails to develop, stronger measures such as establishing an independent national transmission system operator should not be precluded," the report says.

27 janvier 2004 : fuite d'eau sur le réacteur n°6

TEPCO finds water leak at Fukushima nuclear plant.
Reuters News
LBA

TOKYO, Jan 27 (Reuters) - Tokyo Electric Power Co (TEPCO) (9501.T), Japan's biggest electricity producer, said on Tuesday it found a water leak in one of its shut-down **nuclear** reactors earlier this week.

TEPCO officials saw water leaking from a part of the core of the No. 6 reactor at its **Fukushima**-Daiichi plant in **Fukushima** prefecture, northeast Japan, at 5:49 p.m. local time on Sunday, a Tokyo-based company spokesman said.

The leak, of 4.7 litres of water, stopped after about half an hour, the spokesman said.

No radiation leaked outside of the plant, he said.

The utility was forced to shut down all 17 of its **nuclear** reactors in **Fukushima** and Niigata prefectures by April 2003 after it admitted in August 2002 that it had falsified **nuclear** safety documents for more than a decade.

The **Fukushima**-Daiichi No. 6 reactor, which can generate 1,100 megawatts of electricity, had resumed operation on July 15 last year and was shut down again for scheduled safety inspections on September 30.

TEPCO had yet to set a date to restart the reactor, the spokesman said.

The company's 17 reactors have a combined capacity of 17,308 megawatts, or about 28.7 percent of its total power generation capacity as of March 2003. Only six of these units are now generating power.

At its Kashiwazaki-Kariwa plant in Niigata prefecture, northwestern Japan, TEPCO plans to start conducting final checks on its No. 1 reactor on Wednesday. The 1,100 megawatt reactor was shut for scheduled inspections on September 3.

4 mars 2004 : la méfiance du public retarde le redémarrage des centrales nucléaires

Distrust hinders N-plant reopening
Daily Yomiuri
YOMSHI
10

Tokyo Electric Power Co. has been slow to resume operations of **nuclear** reactors that were suspended after a series of scandals involving cover-ups of flaws at its reactors due to distrust among residents toward the electric power company.

The **Fukushima** prefectural government Tuesday approved the restart of the No. 3 reactor at TEPCO's **Fukushima** No. 2 **nuclear** power plant. Although TEPCO reopened the reactor Wednesday, 10 out of 17 reactors remain closed for safety checks after scandals.

TEPCO hopes to have 14 or 15 reactors in operation by June, but it will be difficult to ease people's distrust. TEPCO will have to work harder to overcome these feelings.

In April, all 17 reactors run by TEPCO were forced to shut down because of the scandals. Since May, TEPCO has been gradually resuming operation of these reactors .

As of Tuesday, the operation of 11 reactors had been suspended. Among the 11 reactors, the government verified the safety of only four reactors--No. 2 and No. 4 reactors at **Fukushima** No. 1 **nuclear** power plant, No. 3 reactor at **Fukushima** No. 2 **nuclear** power plant and No. 1 reactor at Kashiwazaki-Kariwa **nuclear** power plant in Niigata Prefecture.

TEPCO has completed inspections of the four reactors to confirm the airtightness of their reactor vessels. A TEPCO executive said, "It's technically feasible for another three reactors, in addition to No. 3 reactor at **Fukushima** No. 2 **nuclear** power plant, to restart operation."

But the resumption of operations for the three reactors has been delayed because TEPCO has yet to earn the trust of local governments. The distrust of local residents toward the safety of **nuclear** reactors has not been dealt with since the scandals.

For example, after the **Nuclear** and Industrial Safety Agency verified the safety of No. 3 reactor at **Fukushima** No. 2 **nuclear** power plant, a pipe leak was brought to light in January.

In late February, TEPCO President Tsunehisa Katsumata visited the Niigata prefectural government to explain the preventive measures the company is taking against such problems. It is making desperate efforts to win the trust of residents, but their efforts do not seem to be sufficient.

It is likely that the usage rate of TEPCO's **nuclear** power plant facilities in fiscal 2003 will fall to an average of 30 percent. The rate will not reach half of the 80.1 percent level of fiscal 2001 before the troubles came to light.

Moderate weather, which led to lower demand for heating devices in warm winter, precluded a power shortage in fiscal 2003.

In Tokyo this winter, the temperature has not fallen below 0 C. The largest amount of electricity consumption was 49.68 gigawatts in Tokyo in January, less than the maximum output of 54 gigawatts that TEPCO can supply with its current limited number of operating reactors. Electricity sold in January was about 24,880 gigawatt-hours or a 4 percent decrease from a year earlier.

Due to a record cool summer and warm winter, there was no energy crisis in fiscal 2003. As it stands, however, it is feared that a shortage of power may occur again this summer. It is necessary to resume operation of suspended **nuclear** reactors soon.

TEPCO plans to increase the proportion of power generated by **nuclear** power plants to about 50 percent of the total power generated by fiscal 2012. But construction of new **nuclear** power plants has become difficult due to a series of troubles.

In addition, a plan to use plutonium extracted from used **nuclear** fuel mixed with uranium in ordinary **nuclear** reactors has returned to the drawing board, and it will be difficult to implement the plan. The atmosphere surrounding the electric power companies' **nuclear** power plant projects casts a shadow over the long-term national energy policy.

As no measures are seen at present to win the trust of residents, TEPCO must make efforts to gain their trust if it wants to restart the reactors, while finding measures to avoid troubles, improving information disclosure and raising the awareness of the company employees about safety.

17 mars 2004 : redémarrage du réacteur n°4

Tepco Restarted Fukushima No. 4 Nuclear Reactor 0100 GMT
Dow Jones International News
DJI

TOKYO (Dow Jones)--Tokyo Electric Power Co. (J.TER or 9501), or Tepco, Wednesday restarted its No. 4 **nuclear** reactor at the **Fukushima** Dai-Ichi power station.

As scheduled, the power utility resumed operations at the reactor at 10:00 a.m. local time (0100 GMT), a company spokesman said.

"In the next three to four days, we will start supplying electricity from the No. 4 reactor to our transmission network in the Tokyo metropolitan area," said the spokesman.

The No. 4 reactor is the eighth of Tepco's 17 **nuclear** reactors to be restarted following a scandal over falsified inspection reports in the summer of 2002.

The No. 4 reactor has the capacity to generate 784,000 kilowatts of electricity.

-By Shigeru Sato, Dow Jones Newswires; 813-5255-2944; Shigeru.Sato@dowjones.com

-Edited by Hilary Mc Cully [17-03-04 0118GMT]

3 juin 2004 : le centre de stockage de déchets radioactifs reprend ses activités

Japanese plant resumes accepting spent nuclear fuel
BBC Monitoring Asia Pacific
BBCAPPNGC BBCGC CTGBBC

Text of report in English by Japanese news agency Kyodo

Aomori, Japan, 3 June: A **nuclear** fuel reprocessing plant in Rokkasho, Aomori Prefecture, resumed accepting spent **nuclear** fuel Thursday [3 June] for the first time in about 19 months.

Some 46 tons of spent **nuclear** fuel arrived in the village's port from **Fukushima** Prefecture on the day.

Waste delivery to the plant was halted in November 2002 due to welding defects that caused a leak of radioactive water at the plant in the northeastern Japan prefecture.

The spent **nuclear** fuel, from Tokyo Electric Power Co.'s **Fukushima** No 2 plant in the towns of Tomioka and Naraha, was delivered Thursday morning to Mutsuogawara port on the 4,913-ton cargo ship Rokuei Maru.

Following the arrival of the fuel, Aomori prefectural and Rokkasho municipal officials boarded the ship to inspect the containers. Aomori prefectural police provided security in the area due to the residual hazard of the fuel.

The containers will be loaded onto trailers during the day and transported to the reprocessing plant in Rokkasho about 7 km from the port. Japan **Nuclear** Fuel Ltd is building the plant.

Ahead of the facility's scheduled full-fledged operations in July 2006, trial operations using depleted uranium are scheduled to take place this month and another test using spent **nuclear** fuel is being planned for next June.

Japan **Nuclear** Fuel plans to store about 1,600 tons of spent **nuclear** fuel in the facility before full-fledged operation takes place. During fiscal 2004, it will accept about 529 tons from **nuclear** plants in Japan.

Source: Kyodo News Service, Tokyo, in English 0054 gmt 3 Jun 04

29 juin 2004 : TEPCO va redémarrer trois de ses réacteurs et souhaite y utiliser du plutonium

Tepco Focusing On Starting Up 3 Fukushima Nuclear Reactors
Nikkei Report
NKRP

TOKYO (Nikkei)--Tokyo Electric Power Co. (9501) is shifting its attention toward restarting three **nuclear** reactors at two **Fukushima** Prefecture facilities now that the Kashiwazaki-Kariwa power plant in Niigata Prefecture is fully online.

Tepco's power supply capacity exceeds the estimated 64.5-million-kilowatt maximum demand at the height of summer. But the utility giant is stepping up efforts to resume operations at the remaining three reactors in light of the precondition set by **Fukushima** Governor Eisaku Sato to discuss establishing a pluthermal power plant. Pluthermal facilities reuse plutonium recovered from spent **nuclear** fuel. He has refused to address the program until all of the **nuclear** reactors are operational.

The pluthermal plans, which were being considered for one of the **Fukushima** facilities and the Niigata plant, were scrapped after a widespread practice of covering up accidents was revealed in 2002. President Tsunehisa Katsumata had said that "we are not in a position to make a proposal."

If the pluthermal plans do not move forward, power companies will face a mounting stockpile of spent fuel. **Nuclear** reactors may be forced to suspend operations if spent fuel levels exceed storage capacity. The No. 2 **Fukushima** facility could reach capacity in about two years if current fuel shipments to a reprocessing plant in Rokkasho, Aomori Prefecture, are suspended.

(The Nihon Keizai Shimbun Tuesday morning edition)

5 août 2004 : arrêt du réacteur n°3 en raison de "problèmes techniques"

TEPCO to shut nuclear unit due to technical problem.

Reuters News
LBA

TOKYO, Aug 5 (Reuters) - Tokyo Electric Power Co. (9501.T) said on Thursday it would carry out an unplanned shutdown at its 784,000-kilowatt **nuclear** generator in **Fukushima**, northwestern Japan, due to technical problems.

There had not been any radiation leak, TEPCO said.

TEPCO, Japan's biggest power producer, will halt power generation at the No. 3 unit of its **Fukushima** Daiichi plant later on Thursday for inspections, a company spokesman said.

More Problems at Japan's Fukushima Reactor BY Mike Hurle
5 août 2004
WMRC Daily Analysis
WDAN

Tokyo Electric Power Co. (TEPCO) in Japan has made an unplanned shutdown of a reactor at its **Fukushima** Daiichi **nuclear** complex. The Number Three reactor, which has a generating capacity of 784MW, will undergo a full inspection later today, to replace routine inspections that had been scheduled for later this month. TEPCO blamed unspecified technical difficulties and ruled out the possibility of any leak.

Significance: The **Fukushima** complex is one of TEPCO's main sources of electricity generation. The Number Three reactor was one of the facilities to be closed down following the **nuclear** safety reporting scandal in September 2002 and was amongst the first to reopen, in mid-2003. TEPCO has an optimum 17,400MW of **nuclear** generating capacity, equivalent to 31% of its total installed capacity. However, Reuters reports that at present six of its 17 reactors are closed.

6 août 2004 : redémarrage du réacteur n°2

RIM LPG NO.790 MARKET NEWS: --Fukushima oks TEPCO to restart No2 reactor at Fukushima Dai-ni Stn
Rim LPG Intelligence Daily
RIMLPG

RIM Tokyo August 6, 2004 12:39 PM (Tokyo local time)

Fukushima Prefecture Thursday allowed Tokyo Electric Power Co to resume operations of the 1,100-MW No2 reactor at its **Fukushima** Dai-ni **nuclear** power station. It was revealed on the day by an official for the prefecture. Upon receiving formal approval for a restart, TEPCO put back on stream the No2 reactor at 10:00 AM on Friday.

9 août 2004 : arrêt du réacteur n°2 à la suite d'une fuite d'eau

RIM CRUDE NO.2425 Market News --TEPCO halts No2 Fukushima Dai-ni reactor on rise in water levels in reactor
Rim Crude Intelligence Daily
RIMCRDNGC Rim Intelligence (English)GC CTGRME

Tokyo Electric Power Co Monday announced that it put to an emergency halt the 1,100-MW No2 reactor at its **Fukushima** Dai-ni station on Sunday evening. The reactor was fresh out of reactivating from slumber. The halt followed a rise in water levels in the **nuclear** reactor due to a water leak in the building housing the reactor and an annex to it. "When to resume the operation remains sketchy. We are currently looking into ways we can adopt to investigate the problem," a TEPCO source said. Upon receiving formal approval from **Fukushima** Prefecture for its restart on Thursday, the No2 reactor was back in operation on Friday. The halt of the reactor reduced the number of TEPCO's running reactors to 10, whose combined electricity generation was said to be at 10,308-MW. Generation combined of the remaining seven reactors was said to be at 7,000-MW. TEPCO has 17 reactors in total.

Platts - Japan's TEPCO idles Fukushima-2 plant's No 2 nuclear power unit.
9 août 2004
Platts Commodity News
PLATT

Tokyo (Platts)-9Aug2004/122 am EDT/522 GMT Japan's Tokyo Electric Power Co idled its 1.1-mil kW No 2 **nuclear** power unit at the **Fukushima**-2 **nuclear** power plant in northern Japan Sunday due to water leak, the company said Monday. TEPCO had just restarted this unit last Friday before shutting it down again two days later. With the latest shutdown, the company now has seven idled **nuclear** units in eastern Japan, out of the total 17. The No 1 (460,000 kW), No 3 (784,000) and No 6 (1.1-mil kW) **nuclear** units at the **Fukushima**-1 power plant have been shut for overhaul. Its No 4 (1.1-mil kW) unit at the **Fukushima**-2 plant is also idled for maintenance. In central Japan, TEPCO has shut its No 4 (1.1-mil kW) and No 6 (1.356-mil kW) **nuclear** power units at the Kashiwazaki-Kariwa **nuclear** power plant for turnaround.

Demand for fuel oil and liquefied natural gas for power generation is likely to remain strong in August as TEPCO will run its thermal power generation at high rate following the shutdown of its **nuclear** power units and hot summer.

17 août 2004 : explosion sur une conduite de vapeur

Steam blowout accident reported at thermal power plant in Fukushima
Kyodo News
KYODO

Steam burst from a ruptured pipe at a thermal power plant Sunday in the town of Shinchi, **Fukushima** Prefecture, six days after four workers were killed in a similar accident at a **nuclear** power plant, the government **nuclear** watchdog said Tuesday.

No one was injured in the Shinchi plant accident.

The **Nuclear** and Industrial Safety Agency of the Economy, Trade and Industry Ministry received a report on Sunday's accident as it has been gathering information from thermal power stations on pipe checks in the wake of the fatal accident at the **nuclear** power plant in Mihama, Fukui Prefecture, of Kansai Electric Power Co., agency officials said.

The agency warned all thermal power stations in Japan on Tuesday to secure the safety of their

workers, the officials said.

The coal-fired thermal power plant in Shinchi is operated by Soma Kyodo Power Co., a fifty-fifty joint venture between Tokyo Electric Power Co. and Tohoku Electric Power Co.

26 août 2004 : redémarrage du réacteur n°2

Platts - Japan's TEPCO restarts No 2 Fukushima-2 nuclear power plant.
Platts Commodity News
PLATT

Tokyo (Platts)-26Aug2004/314 am EDT/714 GMT Japan's biggest power supplier Tokyo Electric Power Co Thursday said it had restarted the No 2 (1.1-mil kW) **nuclear** reactor at its **Fukushima**-2 **nuclear** power plant in northern Japan following repairs. The company idled the reactor Aug 8 after discovering a water leak. As of Thursday, six of the company's **nuclear** reactors were still idled for maintenance; the No 1, No 3 and No 6 units at the **Fukushima**-1 plant, while the No 4 unit at the **Fukushima**-2 plant, and the No 4 and No 6 units at the Kashiwazaki-Kariwa plant in central Japan. TEPCO's low sulfur fuel oil demand for thermal power generation is expected to remain strong, however, despite the nuke plant's restart, as TEPCO has to supply electricity to Kansai Electric, industry sources said.

Kansai is currently seeking electricity supplies from utilities to cover its own shortfall as Kansai's **nuclear** power reactor at the 826,000 kW No 3 unit in Mihama power plant, central Japan, was shut following an accident.

Tokyo (Platts)-26Aug2004/316 am EDT/716 GMT The accident, which occured Aug 9, killed five and injured seven, as hot steam erupted from a water pipe. The accident was the result of pipe corrosion as Kansai had previously failed to carry out proper inspections. Kansai is currently conducting inspections of all its **nuclear** units after shutting them down. Kansai also restarted three thermal power units (1.350-mil KW in total) to cover the supply shortfall. TEPCO recently issued a tender to buy 20,000 kl (125,800 bbl) of low sulfur fuel oil for September delivery, but the company only secured 10,000 kl of low sulfur fuel oil.

27 septembre 2004 : les centrales japonaises devront fermer en 2016 si elles ne peuvent pas recycler leurs déchets

Operations at N-plants may cease by 2016
Daily Yomiuri
YOMSHI
2

Operations at all **nuclear** power plants will be halted by fiscal 2016 if spent **nuclear** fuel from the plants cannot be reprocessed, as the plants' storage capacities will have reached their limits, The Yomiuri Shimbun has learned.

The Atomic Energy Commission of Japan issued this warning to a committee on long-term **nuclear** use, which considers the pros and cons of the **nuclear** fuel-cycle policy.

There are 52 reactors at 16 **nuclear** power plants operated by 10 electric power companies in Japan.

Currently most of the spent **nuclear** fuel is kept in the plants' storage pools, while some of it has also been brought to a reprocessing plant in Rokkashomura, Aomori Prefecture, which is scheduled to begin operation soon.

However, if after a review of the **nuclear** fuel-cycle policy the government decides to give up the reprocessing project this year, the spent **nuclear** fuel must be returned to the power plants' storage sites from the reprocessing facility in Rokkashomura.

While operations at the **nuclear** power plants continue, the amount of spent **nuclear** fuel will increase. As a result, the storage facilities will reach capacity by 2016, forcing the power plants to shut down the reactors.

According to the report, if the spent **nuclear** fuel kept in Rokkashomura is returned, the storage pools at Tokyo Electric Power Co.'s **Fukushima** No. 2 **nuclear** power plant in **Fukushima** Prefecture and Kansai Electric Power Co.'s Takahama power plant in Fukui Prefecture will be full.

The report also said the Hamaoka power plant in Shizuoka Prefecture, operated by Chubu Electric Power Co., and Hokkaido Electric Power Co.'s Tomari power plant are expected to face shutdowns in fiscal 2006 and 2008 respectively.

The storage facility at Hokuriku Electric Power Co.'s Shiga power plant in Ishikawa Prefecture, which is expected to be the last one to reach capacity, will be full in fiscal 2016.

"The termination of the reprocessing of the spent **nuclear** fuel will result in operations being halted at the **nuclear** power plants, so we need to discuss measures to be taken," a commission official said.

===

N-plant barred from operating

The **Nuclear** and Industrial Safety Agency has decided not to allow Kansai Electric Power Co. to resume operations at Mihama **Nuclear** Power Plant in Mihamacho, Fukui Prefecture, until it can be confirmed that the company is conforming to the government's technical standards instead of following its original safety confirmation measures, according to sources.

A cooling pipe ruptured at the plant's No. 3 reactor last month, killing five people and injuring six.

The decision will be officially approved Monday at a meeting of the Economy, Trade and Industry Ministry's accident investigation panel.

Economy, Trade and Industry Minister Shoichi Nakagawa will issue direct instructions to KEPCO President Yosaku Fuji.

As for neglecting to inspect the pipe that burst in the accident, KEPCO has said it entrusted inspection of all KEPCO facilities to another company and was unaware of the negligence prior to the accident.

The agency has refused to accept the excuse and is demanding KEPCO accept responsibility for inspections.

29 septembre 2004 : arrêt du réacteur n°2 pour "problèmes techniques"

TEPCO to shut Fukushima reactor for unplanned check.
Reuters News
LBA

TOKYO, Sept 29 (Reuters) - Tokyo Electric Power Co. (TEPCO) (9501.T), Japan's biggest power utility, said it would shut down the No. 2 **nuclear** power generation unit at its **Fukushima**-Daiichi

plant in northern Japan on Wednesday due to technical problems.

TEPCO will start shutting the 784,000-kilowatt unit at around 5:30 p.m. (0830 GMT) for unplanned inspections, a spokesman said.

The company will investigate the cause of the trouble during the shutdown and does not know when the unit will be restarted, the spokesman said.

Earlier on Wednesday, TEPCO reduced the power output from the unit.

The company had said there was no radiation leaking into the outside environment.

6 octobre 2004 : érosion anormale des conduites d'eau sur le réacteur n°1

TEPCO yet to replace pipe at Fukushima nuke plant despite erosion
Kyodo News
KYODO

Water piping at a reactor at the **Fukushima** No. 1 **nuclear** power plant has likely eroded beyond an acceptable margin of safety but has yet to be replaced by operator Tokyo Electric Power Co., the **Fukushima** prefectural government said Wednesday.

The local government said it has consulted the **Nuclear** and Industrial Safety Agency for its opinion as projections based on inspections last year show the pipe at the plant's No. 5 reactor may now be at least 0.1 millimeter thinner than required.

In August, a badly corroded coolant pipe at the Mihama **nuclear** power plant in Fukui Prefecture burst, spilling out superheated steam that killed four workers and injured seven others, one of whom later died. The Mihama plant is run by Kansai Electric Power Co.

Tokyo Electric claimed there was no safety problem with the pipe at the reactor at the **Fukushima** NO. 1 plant, saying it has confirmed the thickness and will in any case be replacing that particular section of piping during regular safety checks to begin Nov. 1.

According to the **Fukushima** prefectural government, the carbon steel pipe located in the reactor's turbine house carries pressurized water at 140 C and erodes at the rate of 0.6 mm a year.

The required thickness for the pipe is 3.8 mm. It was 4.3 mm thick when it was checked last year and was diagnosed as having a remaining service life of about nine months. The prefectural government believes the pipe may have eroded to 3.7 mm or less.

"The pressure inside the pipe is low at the section concerned and the pipe can withstand it even at a thickness of just 0.3 mm. We also have the understanding of the **Nuclear** and Industrial Safety Agency," a Tokyo Electric official said.

Following the Mihama accident, Tokyo Electric reported to the **Fukushima** prefectural government that it has been managing pipe erosions appropriately, but the local government demanded pipe data on each **nuclear** plant.

7 octobre 2004 : le gouvernement assure que l'érosion des conduites d'eau ne pose pas de problèmes

Gov't says no problem with eroded pipe at Fukushima nuclear plant
Kyodo News

KYODO

The **Nuclear** and Industrial Safety Agency said Thursday it saw no safety problem with water piping at a reactor of the **Fukushima** No. 1 **nuclear** power plant, dismissing concerns that it may have been eroded beyond safety levels.

The agency told the **Fukushima** prefectural government that it has concluded that there is no safety problem and has given approval for Tokyo Electric Power Co. to continue operations of the No. 5 reactor at the power station.

The prefectural government said Wednesday it consulted the agency for its opinion as projections based on inspections last year showed the pipe at the reactor may now be at least 0.1 millimeter thinner than required.

Municipalities have become more sensitive to the safety of **nuclear** reactors after a fatal accident in August at the Mihama **nuclear** power plant in Fukui Prefecture.

In that accident, a badly corroded coolant pipe ruptured, spilling out superheated steam that killed four workers and injured seven others, one of whom later died.

The agency, which is under the Ministry of Economy, Trade and Industry, cited as reasons for its conclusion that there is "no safety problem as long as the pipe thickness meets the standard in regular checks," and "the steam flowing through the pipe is at low temperature and the internal pressure is also low."

The required thickness of the pipe is 3.8 mm. It was 4.3 mm thick when it was checked last year and was diagnosed as having a remaining service life of about 10 months. The prefectural government believes the pipe may have been eroded to 3.7 mm or less.

SE EAST ASIA: Japan

14 octobre 2004 : arrêt du réacteur n°2 à la suite d'une panne sur une pompe

Tepco shuts Fukushima reactor
Power in Asia
PWRA
18
Number 413

The Tokyo Electric Power Company (Tepco) was forced to shut down one of its reactors at the **Fukushima nuclear** generation complex in **Fukushima** prefecture on September 29. The closure of the plant followed a malfunction in the pumping system.

The company said that the 784MW No.2 **nuclear** reactor at the **Fukushima** No.1 **nuclear** power plant had been closed because of a problem with the reactor recirculation pumps. It added that no radiation had leaked to the environment from the reactor as a result of the incident.

Explaining the sequence of events, Tepco said that an alarm at around 08.35 in the morning had indicated a problem with a pump system, with the pump automatically switching off. The reactor's output fell to 540MW.

Tepco added that this was followed by a second alarm, indicating problems with another pump

system, as employees were manually reducing output to 200MW. This led Tepco to shut down the reactor, the company said.

Meanwhile Tepco said that the 1,100MW No.1 boiling water reactor at the **Fukushima** No.2 **nuclear** power plant had closed temporarily the same day for entirely unrelated reasons. The scheduled closure of the reactor was to allow for refueling and maintenance at the plant, Tepco said.

Meanwhile in a separate **nuclear** development, the Kansai Electric Power Company informed an official safety panel in Fukui prefecture on October 8 that it had completed inspections at all its **nuclear** reactors in the prefecture. The plants were shut down following the fatal accident at its Mihama **nuclear** generating complex in August.

18 octobre 2004 : report du redémarrage du réacteur n°4 en raison d'un problème sur le circuit de refroidissement

UPDATE 1-Japan's TEPCO delays Fukushima reactor restart.
Reuters News
LBA

TOKYO, Oct 18 (Reuters) - Tokyo Electric Power Co. (TEPCO) (9501.T), Japan's biggest utility, said on Monday it had delayed the restart of the No. 4 **nuclear** power unit at its **Fukushima** Dai-ni plant in northern Japan due to a coolant system problem.

TEPCO attempted to restart the 1.1 million kilowatt unit on Saturday but suspended the process at 8:37 a.m. (2337 GMT) the next day due to the problem, a spokesman said.

"We are currently investigating the cause of the problem," said the spokesman, adding the company did not know when it could restart the unit.

The No 4. reactor has been shut since Oct. 13, 2002, following a scandal over falsified reactor inspections records.

Last week, TEPCO shut the No. 5 **nuclear** unit at its nearby **Fukushima**-Daiichi plant to replace a high-pressure gas pipe.

The **Fukushima** prefectural government suspected the thickness of the pipe, which is not directly connected to the reactor core in the 784,000 kilowatt unit, might have fallen below safe levels and had asked TEPCO to replace it immediately.

TEPCO has 17 **nuclear** power units with combined capacity of 17.31 million kilowatts. As of Monday, eight were running.

RIM PRODUCTS NO.4408 MARKET NEWS --Japan TEPCO halts Fukushima Daini reactor on steam adjuster glitch
18 octobre 2004
Rim Products Intelligence Daily
RIMPRDNGC Rim Intelligence (English)GC CTGRME

Japanese largest power provider Tokyo Electric Power Co, or TEPCO, halted the process of reactivating the No4 1,100-MW reactor at its 4,400-MW **Fukushima** Daini **nuclear** power station on Oct 17, a company spokesman said Monday. The decision came as a glitch was found at the steam adjusting valve in its reactor cooling system. TEPCO on Oct 16 stepped up efforts to reactivate the No4 reactor after the **Fukushima** prefecture gave the green-light a day before.

20 octobre 2004 : redémarrage du réacteur n°5

Tepco Restarts Fukushima No. 5 Nuclear Reactor
Dow Jones International News
DJI

TOKYO (Dow Jones)--Tokyo Electric Power Co. (9501.TO), or Tepco, restarted its No. 5 **nuclear** reactor at the **Fukushima** Dai-Ichi power station Tuesday evening, after replacing part of a high-pressure air pipe associated with the reactor.

Japan's largest power utility will start generating electricity from the 784,000-kilowatt reactor Thursday or Friday, a company spokesman said Wednesday.

Tepco had shut the No. 5 reactor Oct. 13, after the **Fukushima** prefectural government asked the company to immediately replace a portion of the high-pressure pipe. The government suspected corrosion may have caused the pipe thickness to fall below safe levels.

Aug. 9, five workers at the No. 3 reactor at the Mihama power station owned by Kansai Electric Power Co. (9503.TO) were killed when hot steam leaked from a ruptured pipe.

Since that fatal accident, which increased skepticism about **nuclear** power plant safety in Japan, the nation's power companies have conducted unplanned inspections to see whether water and air pipes at their power stations are safe to operate.

Going forward, Tepco plans to shut the No. 5 **nuclear** reactor at the at the **Fukushima** Dai-Ichi power station at the beginning of November to conduct planned inspection and maintenance that will last two months.

As of Wednesday, ten of Tepco's 17 **nuclear** reactors are up and running, the spokesman added.

-By Shigeru Sato, Dow Jones Newswires; 813-5255-2944; Shigeru.Sato@dowjones.com

-Edited by Hilary Mc Cully [20-10-04 0233GMT]

20 octobre 2004 : redémarrage du réacteur n°4 après réparations

Platt's - Japan's TEPCO restarts Fukushima-1 nuke unit after 7-day shutdown.
Platts Commodity News
PLATT

Tokyo (Platts)-19Oct2004/1154 pm EDT/354 GMT Tokyo Electric Power Co on Tuesday restarted a 784,000 kW **nuclear** unit at its **Fukushima**-1 power plant in northern Japan's **Fukushima** prefecture after replacing faulty pipes, a company spokesman said Wednesday. The unit was shut on Oct 13 after the **Fukushima** prefectural government urged TEPCO to immediately replace pipes that did not meet the standard thickness required by the government. As the unit was idled for only seven days, industry sources expect no increase in TEPCO's fuel oil purchase for thermal power generation. After this restart, seven out of TEPCO's 17 **nuclear** units remain idled. These units have a combined power generation capacity of 6.43-mil kW. TEPCO one by one brought down all its **nuclear** power units for inspections and repairs after a scandal broke out in August 2002 over maintenance data cover-ups by the company.

To make up for its **nuclear** power production shortfall, TEPCO ramps up thermal generation, which in turn increases its purchases of crude, fuel oil and liquefied natural gas feedstock.

Tokyo (Platts)-19Oct2004/1155 pm EDT/355 GMT The **nuclear** power industry in Japan took another blow in August this year following a non-radioactive steam leak at a Kansai Electric power plant. The leak from a corroded pipe at Kansai's Mihama plant in western Japan killed four workers and spurred concern among local governments over **nuclear** power generators neglecting to maintain the mininum required thickness of pipes in the units. Six out of Kansai's 11 **nuclear** units, representing 4.9-mil kW of generation capacity, are currently idled for maintenance and check-ups.

28 octobre 2004 : arrêt du réacteur n°4 en raison de la panne d'une valve

SE EAST ASIA: Japan
Tepco halts reactor operation
Power in Asia
PWRA
21
Number 414

The Tokyo Electric Power Company (Tepco) was forced to stop operations at one of its **nuclear** reactor within 24 hours of the restart of the plant after a two-year closure.

Tokyo Electric Power was forced to close the 1,100MW No. 4 reactor in **Fukushima** prefecture on October 17 because one of the control valves did not open fully. The reactor had been brought back into service on October 16 after having been shut down in October 2002.

RIM LPG NO.844 MARKET NEWS: --Fukushima Dai-ichi No2 reactor restarts at 1PM on Friday

29 octobre 2004 : redémarrage du réacteur n°2

Rim LPG Intelligence Daily
RIMLPG

RIM Tokyo October 29, 2004 1:11 PM (Tokyo local time)

Tokyo Electric Power Co, or TEPCO, announced on Friday that it restarted the 784-MW No2 reactor at its **Fukushima** Dai-ichi **Nuclear** Power Station at 1:00PM on the same day after finishing repairs on the recycling pump on the reactor. The reactor is expected to start generation at the end of the month. The reactor remained sustained since Sep 29, when an alarm set off at the pump and the reactor shut for investigations. The restart of the No2 reactor at the **Fukushima** Dai-ichi site raised the number of TEPCO's running reactors to 11, whose combined generation is said to be at 11,664-MW. The six other reactors, which remain shut, have a combined generation capacity of 5,644-MW.

2 novembre 2004 : redémarrage du réacteur n°4

RIM CRUDE NO.2480 Market News --TEPCO restarts Fukushima Dai-ni No4 reactor Tuesday
Rim Crude Intelligence Daily
RIMCRD**NGC** Rim Intelligence (English)**GC** CTGRME

Tokyo Electric Power Co, or TEPCO, said on Tuesday that it restarted the 1,100-MW No4 reactor at its **Fukushima** Dai-ni **Nuclear** Power Station at 9:51AM on the same day after the completion of investigations into a breakdown of a main turbine. If start-up operations go smooth, the reactor would restart generation on Thursday evening. On Oct 16, the reactor restarted after receiving formal approval from **Fukushima** Prefecture on the previous day. The reactor shut again, however, on Oct 23, for a breakdown of the main turbine. The restart of the No4 reactor at **Fukushima** Dai-ni raised the number of TEPCO's running reactors to 12, whose combined generation is at 12,760-MW. TEPCO holds the remaining five reactors shut. The five reactors generate 4,544-MW in total.

RIM CRUDE NO.2480 Market News --TEPCO restarts Fukushima Dai-ni No4 reactor Tuesday
2 novembre 2004
Rim Crude Intelligence Daily
RIMCRD**NGC** Rim Intelligence (English)**GC** CTGRME

Tokyo Electric Power Co, or TEPCO, said on Tuesday that it restarted the 1,100-MW No4 reactor at its **Fukushima** Dai-ni **Nuclear** Power Station at 9:51AM on the same day after the completion of investigations into a breakdown of a main turbine. If start-up operations go smooth, the reactor would restart generation on Thursday evening. On Oct 16, the reactor restarted after receiving formal approval from **Fukushima** Prefecture on the previous day. The reactor shut again, however, on Oct 23, for a breakdown of the main turbine. The restart of the No4 reactor at **Fukushima** Dai-ni raised the number of TEPCO's running reactors to 12, whose combined generation is at 12,760-MW. TEPCO holds the remaining five reactors shut. The five reactors generate 4,544-MW in total.

4 novembre 2004 : redémarrage du réacteur n°6

RIM LPG NO.847 MARKET NEWS: --TEPCO sees Fukushima Dai-ichi No6 reactor to start generation Nov 7
Rim LPG Intelligence Daily
RIMLPG

RIM Tokyo November 4, 2004 1:38 PM (Tokyo local time)

Tokyo Electric Power Co said on Thursday the 1,100-MW No6 reactor at its **Fukushima** Dai-Ichi **Nuclear** Power Station would start generating power on Nov 7. The reactor restarted on Nov 3 on receiving approval from **Fukushima** prefecture on Nov 2. The prefecture had deferred giving the approval due to some safety considerations to solve. As of Thursday, the total power generation of TEPCO's running reactors, 12 in total, was at 12,508-MW.

RIM CRUDE NO.2483 Market News --Fukushima Dai-ichi No6 reactor starts generation Sat
8 novembre 2004
Rim Crude Intelligence Daily
RIMCRD**NGC** Rim Intelligence (English)**GC** CTGRME

Tokyo Electric Power Co, or TEPCO, announced on Monday that the 1,100-MW No6 reactor at its

Fukushima Dai-ichi **Nuclear** Power Station started generation on Saturday morning. The generation was said to reach 94% of capacity at 11:30AM on Monday. As of Monday, the power generation by TEPCO's 12 running reactors combined was at 12,508-MW. TEPCO has 17 **nuclear** reactors in all and the generation of the remaining five, which currently shut, is at 4,800-MW.

30 novembre 2004 : enquête du gouvernement de Fukushima sur le réacteur n°1

RIM LPG NO.864 MARKET NEWS: --Local gov't to investigate into TEPCO Fukushima-Daiichi No1 reactor
Rim LPG Intelligence Daily
RIMLPG

RIM Japan November 30, 2004 5:41 PM (Tokyo local time)

The authorities of **Fukushima** Prefecture plan to investigate into the No1460-MW reactor at the **Fukushima** Daiichi **nuclear** power station operated by Japanese largest power utility Tokyo Electric Power Co, or TEPCO, on Dec 1, a spokesman of TEPCO said Tuesday. The intention came after TEPCO on Nov 29 replied to the questionnaire regarding a regular maintenance on the reactor. The local government is poised to decide whether it would give consent on a restart after examining the result of its investigation. In the previous cases, TEPCO received green light seven to 10 days after the investigation into the plants started.

8 décembre 2004 : arrêt du réacteur n°2 en raison d'une fuite d'eau radioactive

Tokyo Elec Pwr To Shut Fukushima Nuclear Reactor 0900GMT
Dow Jones International News
DJI

TOKYO (Dow Jones)--Tokyo Electric Power Co. (9501.TO), the largest power utility in Japan, will shut its No. 2 reactor at its **Fukushima** Dai-ichi **Nuclear** Power Station Wednesday evening, following a leak of radioactive coolant water.

The 784,000-kilowatt reactor, located in northern Japan, will be shut at 6:00 p.m. local time (0900 GMT), a Tepco spokeswoman said.

The power utility will investigate the cause of the water leak during the unplanned shutdown. "We are not sure how long we need the reactor to remain offline," the spokeswoman added.

She said a company worker found 0.8 liter of radioactive coolant water had leaked from a pipe associated with the reactor Wednesday morning.

-By Shigeru Sato, Dow Jones Newswires; 813-5255-2944; Shigeru.Sato@dowjones.com

-Edited by Hilary Mc Cully [08-12-04 0854GMT]

Japon: 2 réacteurs nucléaires fermés pour une petite fuite d'eau radioactive BY MIS
9 décembre 2004

Agence France Presse
AFPFR**LA** Français

TOKYO, 9 déc (AFP) -

Deux réacteurs nucléaires ont été fermés jeudi au Japon en raison d'une petite fuite d'eau radioactive dans leurs systèmes de canalisation, a indiqué jeudi Tokyo Electric Power (TEPCO), la première compagnie d'électricité privée au monde.

Les fuites se sont produites dans la centrale **nucléaire** de **Fukushima** (nord du Japon) mais elles n'ont pas affecté l'environnement extérieur, a précisé TEPCO.

Selon la presse locale, trois ouvriers de la centrale auraient été exposés à de faibles radiations sans avoir à craindre pour leur santé.

mis-fl/agr/mpd

17 décembre 2004 : arrêt du réacteur n°6 en raison d'une fuite d'eau

TEPCO to shut remaining Fukushima-Daiichi unit.
Reuters News
LBA

TOKYO, Dec 17 (Reuters) - Tokyo Electric Power Co. (TEPCO) (9501.T), Asia's biggest power utility, said on Friday it will shut the No. 6 **nuclear** power generation unit at its **Fukushima**-Daiichi plant to investigate a possible water leak.

A TEPCO spokesman said it would shut the 1.1 million-kilowatt unit on Dec. 19.

The spokesman said that with the closure of the No. 6 unit, all its **nuclear** power generation units at the **Fukushima**-Daiichi plant, located in northern Japan, will be offline.

17 décembre 2004 : TEPCO va arrêter tous ses réacteurs pour chercher l'origine d'une fuite d'eau radioactive

TEPCO to suspend all reactors at Fukushima No. 1 plant
Kyodo News
KYODO

Tokyo Electric Power Co. said Friday it will suspend the operations of the only running reactor at the six-reactor **Fukushima** No. 1 **nuclear** power plant in **Fukushima** Prefecture, possibly from Monday, to investigate a likely radioactive water leakage.

The utility said it will take necessary steps on Sunday and stop the No. 6 reactor.

Five of the plant's six reactors have already been put out of operation due to defects and regular

inspections.

The suspension of operations of the last reactor is feared to significantly influence power supplies in its service areas, although the company said it will have other power plants cover the loss while expecting the peak of electric power demand for this winter to come in January and February.

The electric power firm suspects a water leakage near a valve attached to a pipe inside the reactor containment vessel.

Up to about 750 liters of water have been draining away every hour and the amount has been gradually increasing, but there is no radiation leak outside of the plant and little immediate impact on the safety operations of the reactor, it said.

SE EAST ASIA: Japan
Tepco closes Fukushima reactors

7 janvier 2005 : arrêt de tous les réacteurs en raison d'une fuite d'eau radioactive

Power in Asia
PWRA
20
Number 419

The Tokyo Electric Power Company (Tepco) has suffered further problems at one of its **nuclear** power plants in **Fukushima** prefecture.

Tepco said on December 8 that it had shut down two of the six reactors at the **Fukushima** Daiichi **nuclear** power complex in the prefecture because of leakages of radioactive water. It noted that at the time three of the four other reactors at the complex were undergoing scheduled safety inspections and other tests.

Tepco added that three workers had been exposed to minor doses of radiation as a result of the incidents, but emphasized that there had been no radiation leak outside the plant. In addition, the exposure to the workers had not exceeded permitted levels and no one had been injured, the company said.

Leaks were found at both the 784MW No.2 and No.4 boiling water reactors. At the No.2 reactor, 0.8 liters of water had leaked from the pipes of a moisture separator while at the No.4 reactor less than 0.5 liters of water had leaked.

Subsequently Tepco said on December 17 that it was suspending operations at the No. 6 reactor at the **nuclear** power complex in order to investigate a suspected radioactive water leak. Tepco said that it suspected the leak was near a valve inside the reactor containment vessel.

The 784MW No.6 reactor at the complex had been the only operating reactor at that point. Operation of the five other reactors at the **Fukushima** No.1 complex had been stopped because of scheduled inspections and the previous leaks.

Up to 750 liters of water had been leaking an hour with the amount gradually increasing. However, Tepco emphasized that there had been no leakage of radiation outside the plant and that there was little immediate impact on the safety of the reactor.

Tepco said that the temporary suspension of operations at the No.6 reactor and the other reactors at the plant would not affect supplies during the winter peak power demand period of January and

February. The closures would be covered by output from the company's other power plants.

Meanwhile the Kansai Electric Power Company has closed its Takahama No. 2 **nuclear** reactor in Fukui prefecture for a three month period to conduct scheduled safety inspections. The 826MW unit at the four-reactor complex was closed in mid-December.

9 février 2005 : redémarrage des six réacteurs

TEPCO resumes operation of reactor at Fukushima No. 1 plant
Kyodo News
KYODO

Tokyo Electric Power Co. resumed Wednesday the operation of a reactor at its **Fukushima** No. 1 **nuclear** power plant in **Fukushima** Prefecture, about 50 days after the operations of all six reactors at the plant were suspended due to defects and inspections, the utility said.

The No. 6 reactor will start generating electricity from Friday, and will be operated at normal capacity from Sunday, the electric power company said.

The 1,100-megawatt, boiling-water reactor was shut after water leakage was found on Dec. 20 last year.

Water leakage was also found at the plant's No. 2 and No. 4 reactors on Dec. 8, leading to a suspension of their operations.

Meanwhile, the utility has been preparing to resume the operation of the No. 5 reactor, but its process has been delayed because of a difference between the **Fukushima** prefectural government and the central government over whether water piping at the reactor should be replaced.

The prefecture has said the piping has corroded to an unacceptable level and asked the electric power firm to replace it.

14 février 2005 : le réacteur n°3 ne redémarrera qu'en mars

RIM CRUDE NO.2542 Market News --TEPCO's No3 Fukushima Dai-ichi nuclear reactor to restart early Mar
Rim Crude Intelligence Daily
RIMCRD**NGC** Rim Intelligence (English)**GC** CTGRME

Tokyo Electric Power Co said on Feb 10 that the 784-MW No3 reactor at its **Fukushima** Dai-ichi **Nuclear** Power Station will restart in early March. At a time when the reactor entered turnaround, its restart was expected to be in late Dec. The schedule was then postponed, however, by a delay in maintenance work caused by the removal of pipes and investigations into the cause of a breakdown at a related facility, according to an informed source. Meantime, the 1,100-MW No6 plant at the same site was expected to restart generation on Feb 11. As of Feb 10, seven out of the 17 reactors, owned by TEPCO, are in operation, generating 8,212-MW total, or about 47.4% of total the capacity of 17,308-MW.

22 février 2005 : redémarrage du réacteur n°2

Platt's - Japan's TEPCO restarts 784,000 kW No 2 Fukushima reactor Tuesday.
Platts Commodity News
PLATT

Tokyo (Platts)-22Feb2005/152 am EST/652 GMT Power producer Tokyo Electric Power Co Tuesday restarted the 784,000 kW No 2 reactor at its **Fukushima**-1 **nuclear** power plant in northern Japan, the company said. TEPCO had idled the unit on Dec 9 last year after it found a small radioactive water leak from the piping systems. The company has restarted the unit after completing repairs, a company official said. TEPCO at present has nine **nuclear** reactors inoperational, which has removed 8.312-mil kW of generating capacity out of a total of 17.308-mil kW that the company has over 17 units across the country. TEPCO's 784,000 kW No 4 reactor at **Fukushima**-1 and 1.1-mil kW No 1 reactor at the Kashiwazaki-kariwa plant in central Japan have been shut due to mechanical problems.

17 mars 2005 : le réacteur n°3 ne peut être redémarré en raison d'une panne sur une pompe

TEPCO suspends restart of Fukushima nuke unit again.
Reuters News
LBA

TOKYO, March 17 (Reuters) - Tokyo Electric Power Co. (TEPCO) (9501.T) said it suspended the restart of the No. 3 **nuclear** power generator at its **Fukushima**-Daiichi plant due to technical trouble on Wednesday, the unit's second such halt this month.

TEPCO, Japan's biggest power utility, had begun restarting the 784,000-kilowatt unit in northern Japan's **Fukushima** prefecture on Tuesday.

"We suspended the restart process to investigate (trouble at) a coolant pump," TEPCO said in a statement issued on Thursday.

A **nuclear** power unit usually resumes generating electricity two or three days after being restarted.

TEPCO had shut the unit on Aug. 9, 2004 for regular inspections and tried to restart it on March 8 with the aim of resuming power generation on March 14.

But the company had to suspend the process after it found a mechanical problem on March 9.

Currently, eight of TEPCO's 17 **nuclear** reactors are generating electricity.

18 mars 2005 : arrêt du réacteur N°3 en raison d'une panne sur une pompe à eau

RIM CRUDE NO.2566 Market News --Fukushima Dai-ichi No3 reactor shuts down again, pushing back restart

Rim Crude Intelligence Daily

RIMCRD**NGC** Rim Intelligence (English)**GC** CTGRME

Tokyo Electric Power Co said on Thursday that the 784-MW No3 plant at its **Fukushima** Dai-ichi **Nuclear** Power Station stopped re-activating the reactor after a glitch was found on the water pump on Wednesday evening. The plant restarted on Tuesday and was supposed to restart generation on Thursday evening. The No3 plant restarted the reactor on March 8 and then stopped the activation process for a breakdown of a safety valve. On March 12, an oil leak was then reported on a pump in the plant's cooling system, pushing back its restart to March 15. As of Thursday, TEPCO got eight **nuclear**-powered plants to run. The eight plants, excluding the **Fukushima** Dai-ichi No3 plant, generate 8,740-MW total, or 50.5% of the total generation of TEPCO's 17 plants.

21 avril 2005 : redémarrage du réacteur n°1

Platt's - Japan's TEPCO resumes restart of 1.1-mil kW Fukushima nuke unit.

Platts Commodity News

PLATT

Tokyo (Platts)-21Apr2005/250 am EDT/650 GMT Japanese power supplier Tokyo Electric Power Co Thursday resumed restart of the 1.1-mil kW No 1 **nuclear** reactor at its **Fukushima**-2 **nuclear** power plant in northern Japan after a failed attempt earlier this week, the company said. TEPCO has completed all the repair work after it was forced to halt restart on Monday due to a technical glitch. Industry sources expect TEPCO's demand in low sulfur fuel oil for thermal power generation to slow down as more **nuclear** units have become operational. After the restart of the No 1 **Fukushima**-2 reactor, TEPCO would have 10 **nuclear** power reactors with a combined generation capacity of 10.624-mil kW, in operation, representing 61.4% of the utility's total capacity of 17.308-mil kW. In March, TEPCO only had seven **nuclear** units with a combined capacity of 7.64-mil kW. TEPCO bought 498,000 kl (423,300mt or 3.13-mil bbl) of low sulfur fuel oil in March.

26 mai 2005 : arrêt du réacteur n°1 en raison d'un "problème technique"

PLATTS - Japan's TEPCO idles Fukushima-2 No 1 nuclear unit Wed on glitch.

Platts Commodity News

PLATT

Tokyo (Platts)-25May2005/951 pm EDT/151 GMT Japanese power supplier Tokyo Electric Power Co idled its 1.1-mil kW No 1 **nuclear** power reactor at its **Fukushima**-2 **nuclear** power plant on Wednesday due to a technical glitch, the company said. After the shutdown, TEPCO had 10 reactors with a combined generating capacity of 10.624-mil kW in operation. TEPCO's **nuclear** utilization rate also fell to 61.4% from 67.7%. As a result, tightness in the domestic spot market for low sulfur fuel oil will tighten further, industry sources said. LSFO supplies to the domestic spot market are currently tight due to a drop in the operating rate of Japanese refiners amid regular turnarounds. Japanese refiners operated their refineries at 76.2% of capacity for the week ending May 21, falling from 78.9% a year earlier, according to the latest data provided by the Petroleum Association of Japan.

3 juin 2005 : redémarrage du réacteur n°1

PLATTS - Japan's TEPCO restarts 1.1-mil kW Fukushima-2 nuke unit.
Platts Commodity News
PLATT

Tokyo (Platts)-3Jun2005/420 am EDT/820 GMT Japanese utility Tokyo Electric Power Co Thursday restarted its 1.1-mil kW No 1 **nuclear** reactor at the **Fukushima**-2 power plant in eastern Japan after completing repairs, TEPCO said Friday. TEPCO had idled the unit on May 25 due to a technical problem. Following the restart, TEPCO has in operation a total 11 **nuclear** units with a combined power generation capacity of 11.724-mil kW representing 68% of its total **nuclear** power capacity. Industry sources expect TEPCO's low sulfur fuel oil purchase to slow down in line with the rise in its **nuclear** power plants' operating rates. In the latest tender, TEPCO bought 25,000 kl (21,250mt) of low sulfur fuel oil for June delivery, lower than the planned 40,000kl (34,000mt), as offer prices were higher than the company's estimates amid tight LSFO spot supplies.

11 août 2005 : arrêt du réacteur n°1 à la suite d'une fuite radioactive

Tepco To Shut Fukushima Nuclear Reactor On Water Leak
Dow Jones International News
DJI

TOKYO (Dow Jones)--Tokyo Electric Power Co. (9501.TO) plans to shut down the No. 1 **nuclear** reactor at its **Fukushima** Dai-Ichi power station Thursday evening to conduct unplanned inspections, a company spokesman said.

The power utility will investigate the leakage of water containing tritium, a radioactive substance, in a building that houses a No. 1 reactor turbine.

The No. 1 reactor - which has a maximum capacity to generate 460,000 kilowatts of electricity - will be shut around 6:00 p.m. local time (0900 GMT).

Excluding the No. 1 reactor, Tepco is operating 10 of its 17 **nuclear** reactors, the spokesman said, adding: "the shutdown of the reactor won't affect our electricity supply in the Tokyo area."

Japan's electricity demand typically peaks in July or August, as households and offices keep air conditioners turned-on during the hot summer months.

-By Shigeru Sato, Dow Jones Newswires; 813-5255-2944; Shigeru.Sato@dowjones.com

17 août 2005 : un tremblement de terre occasionne une fuite d'eau radioactive

Quake caused radioactive water to leak at reactors
Kyodo News
KYODO

Tuesday's magnitude 7.2 quake caused radioactive water to leak within three reactors in **Fukushima** Prefecture but the radioactivity level was low and the incident did not affect the environment outside the facilities, Tokyo Electric Power Co. said Wednesday.

Water in pools to store spent **nuclear** fuel at the reactors was shaken by the quake and entered air ducts about 10 centimeters above the surface, causing a total of 24.5 liters of water to leak onto the floors of the reactor buildings from joints in the ducts, it said.

The leakage took place at the No. 2 and No. 6 reactors of the **Fukushima** No. 1 **nuclear** power plant and the No. 4 reactor of the **Fukushima** No. 2 **nuclear** power plant.

Japan quake causes radioactive water spill from spent fuel storage pools; no leakage outside
17 août 2005
Associated Press Newswires
APRS

TOKYO (AP) - Water containing small amounts of radiation spilled out of spent fuel storage pools at two **nuclear** power plants in northern Japan when a powerful magnitude-7.2 earthquake shook the region, the plants' operator said Wednesday.

The water spill from the three pools -- two at **Fukushima** No. 1 **Nuclear** Power Plant and the third at the separate No. 2 plant -- did not leak radiation outside the compounds and workers were not exposed, Tokyo Electric Power Co. said. **Fukushima** is about 260 kilometers (160 miles) northeast of Tokyo.

Tuesday's powerful quake shook wide areas of northern Japan and injured 81 people, according to public broadcaster NHK, but there were no deaths. Tokyo police earlier said that 60 people were injured in the quake.

Water in spent fuel storage pools splashed against the walls during the quake, and some entered wall-mounted ventilation duct openings, company spokesman Hitoshi Hagiwara said. The water later dripped to the floor from the pipes' joints, he said.

More than 24 liters (6.3 gallons) of water spilled from the three pools, which store spent fuel from three reactors at the two plants, Hagiwara said. The leakage has now been cleaned up, he said.

The reactors, which are located in the same buildings as the pools, were unaffected by the quake, the company said in a statement.

22 août 2005 : arrêt du réacteur n°5 à la suite d'un problème sur le circuit de refroidissement

UPDATE 1-TEPCO to shut Fukushima-Daiichi nuclear unit
Reuters News
LBA

(Add details, spokesman comment)

TOKYO, Aug 22 (Reuters) - Tokyo Electric Power Co. (TEPCO) , Asia's biggest utility, said on Monday it will manually shut down the No. 5 **nuclear** power generation unit at its **Fukushima**-Daiichi plant for unplanned inspections.

It said the manual shutdown process for the 784,000-kilowatt unit in northern Japan will start at 11 p.m. (1400 GMT).

The company has decided to shut down the unit, as it suspects a technical problem with one of the emergency coolant systems for the **nuclear** power generator.

"We need to stop the unit to check whether there really is a problem," said a TEPCO spokesman.

16 septembre 2005 : arrêt du réacteur n°1 pour réparer une pompe

UPDATE 1-TEPCO to shut Fukushima nuclear unit for checks
Reuters News
LBA

(Adds details)

TOKYO, Sept 16 (Reuters) - Top Japanese utility Tokyo Electric Power Co. said it would shut a **nuclear** power unit on Friday for unplanned checks due to technical problems, but had no immediate plan to buy extra oil for thermal generation.

TEPCO will start shutting the 1.1 million kilowatt No. 1 unit at its **Fukushima**-Daini plant in northern Japan to inspect and replace defective pump parts, a spokesman said.

There was no radiation leak to the outside environment, he said, adding that the company did not know how long the unit would be shut.

The shutdown brings to eight the number of TEPCO's 17 **nuclear** power generators that are closed for inspections.

In 2003, TEPCO was forced to shut all of its **nuclear** power plants for inspections after it admitted it had falsified **nuclear** safety documents for more than a decade.

The company's oil purchase volumes have declined since that year, when it had to boost fuel purchases massively to compensate for lost **nuclear** power generation capacity.

10 octobre 2005 : arrêt du réacteur n°2 en raison d'une panne sur une pompe

Coolant pump at Fukushima nuclear power plant shuts down
Kyodo News
KYODO

A pump for circulating coolant at Tokyo Electric Power Co.'s **nuclear** power plant in **Fukushima** Prefecture automatically shut down on Monday, affecting output of the No. 2 reactor, but there was no risk of radiation leakage, the company said.

The pump ceased operating after an alarm went off to indicate that it was malfunctioning, TEPCO said.

The company is to investigate after lowering the No. 2 reactor's output to some 30 percent of capacity, it said.

12 décembre 2005 : arrêt du réacteur n°4 en raison d'une fuite d'eau

UPDATE 1-TEPCO to shut nuclear unit for unplanned checks
Reuters News
LBA

(Adds details)

TOKYO, Dec 12 (Reuters) - Tokyo Electric Power Co. (TEPCO) , Asia's largest utility, said on Monday it would shut a **nuclear** power unit at its **Fukushima**-Daiichi plant in northern Japan for unplanned inspections as a pipe had leaked water.

TEPCO will start closing the plant's No. 4 generator at 10 p.m. (1300 GMT), it said in a statement.

The shutdown of the 784,000-kilowatt unit comes about a week after it had restarted electricity generation on Dec. 3 for a test run to complete scheduled inspections since late June.

With the shutdown, six of TEPCO's 17 **nuclear** power generators will be offline.

TEPCO has no immediate plan to start any idle oil-fired power plants or boost oil purchases after the shutdown, a spokesman said.

"We have enough capacity to supply electricity stably even after the latest shutdown, and demand typically peaks during summer, not winter," the spokesman said.

Earlier on Monday, Kysuhu Electric Power Co. said it would shut a 890,000-kilowatt **nuclear** power generator for scheduled inspections for about three months.

With the TEPCO and Kyushu Electric shutdowns, 35 million kilowatts of **nuclear** power generation capacity, or about 72.5 percent of Japan's total, will be in operation, according to Reuters calculations.

Nine Japanese utilities and a wholesaler have 54 **nuclear** power generators for commercial use, with total generating capacity of 48.222 million kilowatts. (for table of Japan's **nuclear** power plant operations status, click on [ID:nT308116])

21 décembre 2005 : réduction de l'activité du réacteur n°2 à la suite de "problèmes techniques"

TEPCO cuts nuclear generator operation for repairs
Reuters News
LBA

TOKYO, Dec 21 (Reuters) - Tokyo Electric Power Co. (TEPCO) said on Wednesday it was reducing the operation of a **nuclear** power generator at its **Fukushima**-Daiichi plant to less than 50 percent of the unit's capacity for unplanned repairs.

TEPCO, Asia's largest utility, began slowing down the 784,000-kilowatt No. 2 generator at the northern Japan plant late on Tuesday as it had found technical problems, a company spokesman said.

The unit is running at 500,000 kilowatts, and the rate will be reduced to 380,000 kilowatts on Thursday morning for repairs.

"The repairs will take several days," the spokesman said. "After they are completed, we will bring the unit's run rate back to normal."

TEPCO will not increase its thermal power generation because the operation cut will have limited impact on the company's overall electricity supply, he said.

19 janvier 2006 : découverte de fissures sur les barres de contrôle du réacteur n°6

Cracks in nuclear reactor control rods found in Fukushima plant
Kyodo News
KYODO

Tokyo Electric Power Co. has reported it found cracks in the stainless covers of rods used to control **nuclear** fission at a reactor in **Fukushima** Prefecture, the **Nuclear** and Industrial Safety Agency said Thursday.

Of one of the nine cracked control rods of the No. 6 reactor at the **Fukushima** No. 1 **nuclear** plant, the 1-millimeter-thick cover had curled up and partly fallen off, a case never found before at other **nuclear** reactors, the agency said.

The agency ordered TEPCO to investigate the cause of the damage, which was found during a regular checkup, saying it could lead to a "serious situation" if the control rods cannot be used.

The agency has also called for TEPCO and five other power utilities -- Tohoku Electric Power Co., Hokuriku Electric Power Co., Chubu Electric Power Co., Chugoku Electric Power Co. and Japan Atomic Power Co. -- which operate the same type of boiling water reactors to conduct checkups.

According to the agency, similar cracks were found in 2003 in the No. 1 reactor at Japan Atomic Power's Tsuruga Power Station in Fukui Prefecture and in TEPCO's **Fukushima** No. 2 **nuclear** plant.

6 février 2006 : Toshiba a falsifié les données d'un compteur du réacteur n°6

Toshiba falsified TEPCO reactor's coolant flow meter data.
Japan Energy Scan
JPES
0

TOKYO, Jan. 31 Kyodo

Tokyo Electric Power Co. said Tuesday that major electronics maker Toshiba Corp. had falsified data on a coolant flow meter for one of the six reactors at TEPCO's **Fukushima** No. 1 **nuclear** power plant in **Fukushima** Prefecture.

But the data fabrication has posed no problem in legal terms or in the safe operation of the plant's No. 6 reactor with the output capacity of 1.1 million kilowatts, the company said.

The Toshiba-supplied meter was found to have failed to meet accuracy requirements as specified by the power company, it said.

TEPCO said the data on the flow meter was falsified when it was replaced with a new one in 1993.

The country's largest power utility company said it has confirmed the data fabrication after receiving a document from an in-house whistle-blower in September 2005 claiming Toshiba, a key manufacturer of **nuclear** power facilities, supplied the flow meter with fabricated data. The flow meter measures coolant flows at the reactor.

TEPCO said it has told Toshiba to take measures to prevent a recurrence of similar cases.

The **Fukushima** No. 1 **nuclear** power plant, located in the towns of Okuma and Futaba in **Fukushima** Prefecture facing the Pacific, has six reactors with a total power output capacity of 4.7 million kilowatts. The No. 6 reactor began operation in October 1979.

TEPCO operates another **nuclear** power plant in **Fukushima** Prefecture -- the **Fukushima** No. 2 **nuclear** plant whose four reactors have a total power output capacity of 4.4 million kilowatts.

Toshiba says may have tampered with reactor data
10 février 2006
Reuters News
LBA

TOKYO, Feb 10 (Reuters) - Japanese electronics maker Toshiba Corp. said on Friday its engineers may have tampered with test data on equipment used in the world's biggest **nuclear** power station, operated by Tokyo Electric Power Co. .

Both TEPCO, Asia's biggest power utility, and Toshiba -- which has just bought Westinghouse, the U.S. power plant arm of British **Nuclear** Fuels, for $5.4 billion -- are investigating, though a TEPCO spokesman said the equipment meets government precision standards and poses no operational risk.

The parts measure the volume of water flowing into the reactor at the No.7 power unit at TEPCO's Kashiwazaki-Kariwa plant in northern Japan.

TEPCO said late last month it had found that Toshiba had tampered with test data on similar

equipment in 1993 to meet TEPCO's internal precision standards on coolant flow meters.

The equipment, used at the No.6 **nuclear** power unit at TEPCO's **Fukushima** Daiichi power plant, meets government standards and raises no safety issues, TEPCO said.

The TEPCO spokesman said no decision had yet been taken on penalising Toshiba, Japan's number-two electronics conglomerate.

Earlier on Friday, Toshiba shares closed up 1.2 percent at 766 yen, while TEPCO slid 0.7 percent to 2,930 yen. The Nikkei average <.N225> fell 1.11 percent.

20 février 2006 : arrêt du réacteur n°3 en raison d'une fuite sur une pompe

Japan's TEPCO to halt nuclear reactor for repair
Reuters News
LBA

TOKYO, Feb 20 (Reuters) - Tokyo Electric Power Co. (TEPCO) will shut down a **nuclear** reactor in northern Japan to fix a leaking water pump, a TEPCO spokesman said on Monday.

TEPCO will begin shutting down the 784,000-kilowatt No.3 generator at its **Fukushima**-Daiichi plant, starting from 5 p.m. (0800 GMT) on Tuesday, said TEPCO spokesman Kiyoto Ishikawa.

The repairs to fix the water leak were being conducted as a precaution, he said.

"It's not a situation where this would cause any particular problems," Ishikawa said, adding that there was no risk of any radiation leaking to the outside.

TEPCO also plans to replace control rods in the reactor, and it was uncertain how long the unit would remain shut down, Ishikawa said.

TEPCO said in a statement that signs of the water leak were initially detected in October but were not considered serious enough at the time to immediately impair the reactor's operation.

17 mars 2006 : arrêt du réacteur n°4 en raison d'une panne sur une pompe

RIM CRUDE NO.2801 MARKET NEWS --TEPCO to shut Fukushima Daini No.4 reactor on Mar 19 on pump glitch
Rim Crude Intelligence Daily
RIMCRD**NGC** Rim Intelligence (English)**GC** CTGRME

Tokyo Electric Power Co said on Friday it will close the 1,100-MW No.4 **nuclear** reactor at its **Fukushima** Daini power station on March 19 for safety checks. It aimed to replace a mechanical seal on the reactor's recirculation pump after a glitch was detected. With the closure of the reactor, the number of TEPCO's operating **nuclear** reactors will decline to 12, out of its 17 reactors, with the total capacity of 11,868-MW, accounting for 68.6% of its total.

28 avril 2006 : les procédures de sécurité en cas de tremblement de terre doivent être améliorées

Nuclear plants antiquake safety guidelines to be upgraded

Kyodo News
KYODO

The **Nuclear** Safety Commission on Friday drafted a revision of anti-earthquake guidelines for **nuclear** power plants, urging the operators to see to it that those facilities can withstand temblors with a magnitude of 6.5 or greater, the maximum in the current standards.

The governmental commission did not propose a figure to replace the magnitude 6.5, set in 1981, but major power companies plan to voluntarily set 450 gal, a unit of quake equivalent to a magnitude of 6.8, as a new criterion, company officials said.

The commission plans to finalize the revision around this summer and the power companies are expected to subsequently present to the state the new figure, commission members said.

The company officials suggested, however, the move is unlikely to have a major impact on the operations of most of the 55 **nuclear** plants run in Japan because they were already designed to withstand earthquakes with a magnitude of 6.5 or higher.

The facilities which would need reinforcement construction after the new guidelines are in place include nine reactors nationwide such as the **Fukushima** No. 1 and 2 reactors run by Tokyo Electric Power Co. and the Takahama plant by Kansai Electric Power Co., they said.

The commission came up with the plan to revise the 25-year-old standards following calls to do so after strong earthquakes including the 1995 Great Hanshin Earthquake which killed more than 6,400.

15 mai 2006 : arrêt du réacteur n°4 en raison d'une fuite d'huile

UPDATE 1-TEPCO to shut nuclear power unit due to oil leak
Reuters News
LBA

(Adds details)

TOKYO, May 15 (Reuters) - Tokyo Electric Power Co. said on Monday it would shut a 1.1-million-kilowatt **nuclear** power generation unit in **Fukushima**, northern Japan, for unplanned inspections and repair work because of an oil leak.

The No. 4 unit at its **Fukushima**-Daini plant would be brought offline on Tuesday, the company said in a statement.

A company spokesman did not know when TEPCO could complete the repair works and restart the unit.

The company did not immediately plan to boost oil purchases for thermal power generation, he said, without specifying the reason.

TEPCO typically buys 4.8-4.9 million kilolitres of crude oil and low-sulphur fuel oil for thermal power generation every month.

There was no radiation leak to the outside environment because of the leak, the company said.

For table of **nuclear** power plant operation status, click on [ID:T296857]

18 mai 2006 : des informations confidentielles sur la sécurité de la centrale ont été diffusées par erreur sur Internet

Nuclear power plant training info leaked onto Internet via Winny software
Kyodo News
KYODO

Training data on Tokyo Electric Power Co.'s **nuclear** power plant in **Fukushima** Prefecture have been leaked onto the Internet from its employee's personal computer through Winny file-sharing software, TEPCO said Thursday.

The leaked information does not include key data on **nuclear** material or manuals on how to operate **nuclear** plants, the largest Japanese power utility said, adding it has received a stern warning from the **Nuclear** and Industrial Safety Agency under the Ministry of Economy, Trade and Industry.

The information, created by the BWR Operator Training Center, contains an outline of equipment at such power plants, it said.

The center is offering training to **nuclear** power operators at its simulation facility in the central control room.

In August last year, a TEPCO employee brought home a CD containing training data that have been kept in custody in TEPCO's **Fukushima** No. 1 **nuclear** station without approval and stored the data in his personal computer for private use, the company said.

It is uncertain when the data were leaked, it added.

22 mai 2006 : fuite radioactive sur le réacteur n°4

Small amount of radiation leaks within Japanese nuclear plant; no leak outside
Associated Press Newswires
APRS

TOKYO (AP) - A small amount of radiation leaked within a Japanese **nuclear** power plant in northern Japan, but no radiation escaped from the compound, the plant's operator said Monday.

A monitor at the No. 4 reactor at **Fukushima** No. 1 Power Plant showed higher than normal levels of radiation early Sunday morning, according to Manabu Yusa, a spokesman for operator Tokyo Electric Power Co., or TEPCO.

A pin-sized hole in the fuel rod may have caused the leak, Yusa said. Other monitors within the compound showed no change in radiation levels, and there was no danger of a leak outside the compound, he said.

No workers were exposed to radiation, and the plant will continue to operate under heightened monitoring, he said.

Fukushima is 239 kilometers (149 miles) northeast of Tokyo.

23 mai 2006 : arrêt d'un réacteur à la suite d'une fuite de vapeur radioactive

TEPCO Shuts Down Nuke Plant After Steam Leak - Kyodo

Dow Jones International News
DJI

TOKYO (Dow Jones)--Tokyo Electric Power Co. (9501.TO) announced Tuesday it will manually shut down for inspection one of the reactors at a **nuclear** power plant in **Fukushima** Prefecture after radioactive steam leaked from a pipe valve, Kyodo News reported.

There is no impact on the surrounding environment, the nation's largest utility said. [23-05-06 0355GMT]

New glitch prevents restart of Tepco's Fukushima-1 nuclear unit
23 mai 2006
Platts Commodity News
PLATT

Tokyo Electric Power Co had to idle the 1.1 gigawatt No 6 reactor at its **Fukushima**-1 **nuclear** power plant in northeastern Japan at 1300 local time (400 GMT) Tuesday for safety checks, after discovering steam leakage in a pipeline, the company said in a statement.

Tepco found the leak while in the process of restarting the unit Monday evening. The unit had been shut on May 16 after an oil leak was found in a pipeline between an electric generator and electric transformer.

Sources estimate a 30-day shutdown of the 1.1 GW **nuclear** unit could cost Tepco 174,000 kl (163,386 mt, 1.09 million barrels) in additional crude and fuel oil consumption. Tepco normally makes up for a shortfall in **nuclear** power generation with thermal power generation using low sulfur fuel oil, crude, LNG and coal feedstocks.

Tepco currently has 11 of its 17 **nuclear** units across Japan operational, corresponding to 11.024 GW or 63.7% of its total **nuclear** power generation capacity of 17.308 GW.

30 mai 2006 : arrêt du réacteur n°6 en raison d'une fuite de vapeur radioactive

LEAD: Tokyo Electric shutting down reactor after radioactive steam leak.
Japan Energy Scan
JPES
0

FUKUSHIMA, Japan, May 23 Kyodo

(EDS: UPDATING WITH MORE INFORMATION, CHANGING DATELINE)

Tokyo Electric Power Co. said Tuesday it is manually shutting down one of six reactors at a **Fukushima** Prefecture **nuclear** power station for inspection after finding a radioactive steam leak.

There has been no impact on the surrounding environment, according to Japan's largest utility.

The halt came only half a day after Tokyo Electric restarted the reactor, which had been shut down for regular checks.

The radioactive steam leaked at the No. 6 reactor of the company's **Fukushima** No. 1 **nuclear** power station that straddles the towns of Okuma and Futaba in **Fukushima** Prefecture, some 250 kilometers north of Tokyo.

A company engineer spotted steam leaking from a valve in the reactor's piping system at around 11 a.m. Tuesday. The leak continued even after the valve's shaft seal was tightened, company officials said.

Tokyo Electric said it began shutting down the reactor manually at 1 p.m. Tuesday. The reactor will be completely shut down later in the day, the officials said.

At midnight Monday, the utility began to restart the No. 6 reactor, which had been shut down for a regular inspection.

The No. 6 reactor, which has an output capacity of 1.1 million kilowatts, is the biggest of the six reactors at the power station whose combined capacity stands at 4.7 million kw.

Tokyo Electric operates another **nuclear** power station near the site -- the **Fukushima** No. 2 **nuclear** power station -- which has seven reactors with a combined output capacity of 8.37 million kw.

12 juin 2006 : arrêt du réacteur n°3 pour réparation

TEPCO says to shut a nuclear unit for 3 weeks
Reuters News
LBA

TOKYO, June 12 (Reuters) - Tokyo Electric Power Co. , Japan's largest utility, said on Monday it would start shutting down the No.3 **nuclear** power generator in its **Fukushima**-Daini plant, northern Japan, on Tuesday to replace parts at the unit.

It will take at least three weeks for TEPCO to replace the parts in the 1.1-million kilowatt unit, a spokesman said.

The spokesman said the company decided to go ahead with the shutdown to replace the unit parts because it had found cracks in corresponding parts of the same type in other **nuclear** units at its plants.

SE EAST ASIA: Japan

22 juin 2006 : arrêt du réacteur n°1 en raison d'une fuite de vapeur radioactive

Tepco closes Fukushima reactor
Power in Asia
PWRA
22
Number 455

The Tokyo Electric Power Company (Tepco) shut down one of the reactors at the **Fukushima** No.1 **nuclear** power station in **Fukushima** prefecture in late May after a radioactive steam leak was discovered. The company emphasized that there had been no threat to the environment or employees from the leak in the reactor's piping system.

The manual stop was ordered less than a day after the 1,100-megawatt (MW) No.6 reactor at the **Fukushima** No.1 plant had been restarted following a regular inspection. The **Fukushima** No.1 generation complex comprises six reactors with 4,700 MW of total capacity.

Meanwhile in better news for the embattled Japanese **nuclear** industry, the Kansai Electric Power Company (Kepco) has received local government approvals to restart the Mihama No.3 reactor. The reactor in Fukui prefecture in western Japan was closed in August 2004 following an industrial accident in which a corroded pipe broke and five employees were killed by the emission of super-heated water and steam.

The approvals received by Kepco in late May from the Fukui prefectural and Mihama municipal authorities will allow the electric power company to recommence generation from the reactor to help meet the summer peak demand. The restart of the plant has already received preliminary approval from the national industry and **nuclear** authorities, with formal government approval expected after further inspections in the second quarter of 2006.

24 juillet 2006 : fuite d'eau radioactive sur le réacteur n°1

Small amount of water containing radiation leaks within Japanese nuclear plant
Associated Press Newswires
aprs

TOKYO (AP) - Water containing a small amount of radiation leaked from a funnel at a **nuclear** power plant in northern Japan, but no radiation escaped from the compound, the plant operator said Monday.

About 4.7 liters (9.8 pints) of radioactive water was found to have leaked from a funnel at the No.1 reactor at **Fukushima** No.2 Power Plant early Sunday, Tokyo Electric Power Co. said in a statement.

No radiation escaped from the compound and no workers suffered injuries, according to company spokesman Hiroyuki Kono.

The reactor has been undergoing a routine checkup and officials were just starting up the reactor when the leak occurred, according to Kono, adding that the incident will not affect the plan to restart the reactor.

Fukushima is 239 kilometers (149 miles) northeast of Tokyo.

1 août 2006 : l'entreprise qui a construit la centrale n°2 poursuivie pour corruption

Obayashi employees grilled over Mizutani Kensetsu scam
Kyodo
Kyodo News
KYODO

TOKYO, Aug. 2 -- Prosecutors investigating a tax evasion scandal involving construction firm Mizutani Kensetsu Co. have questioned employees of general contractor Obayashi Corp. in connection with an airport project Obayashi subcontracted to Mizutani, investigation sources said

Tuesday.

Mizutani posted sales of 10 billion yen from projects related to the construction of Chubu Centrair International Airport in the business year through August 2003, when former company chairman Isao Mizutani, 61, allegedly evaded 230 million yen in corporate taxes, the sources told Kyodo News.

The prosecutors are set to indict Mizutani on Wednesday on charges of the tax evasion.

Obayashi mainly subcontracted to Mizutani land development projects for the construction of the airport in Aichi Prefecture.

The prosecutors asked the Obayashi officials to explain details about contracts with Mizutani over the airport construction and the process of their making the deals, the sources said.

Mizutani was also involved in major construction projects such as Kido Dam and the No. 2 **nuclear** power plant of Tokyo Electric Power Co., both in **Fukushima** Prefecture, as a subcontractor of major builders, the sources said.

As part of efforts to probe why Mizutani was able to win so many deals, the prosecutors have questioned officials of major construction companies such as Taisei Corp. and Kumagai Gumi Co. that failed to win bids for the projects for which Mizutani was subcontracted, the sources said.

Police plan to serve a fresh arrest warrant on Isao Mizutani following the planned indictment for another tax evasion allegation in the business year through April 2004, they said.

==Kyodo

11 août 2006 : fuite de vapeur radioactive

Radioactive Steam Leak At Nuclear Plant In Japan - Tepco
Dow Jones International News
DJI

TOKYO (AP)--A negligible amount of radioactive steam released at a **nuclear** plant in northern Japan escaped outside the compound, but there is no fear of damage to environment, operator Tokyo Electric Power Co. (9501.TO), or Tepco, said Friday.

An increase in the level of tritium was detected during an air sampling outside the plant Sunday, and the operator later found out that radioactive material was leaking in steam from the **Fukushima** Daiichi **Nuclear** Power Station, about 240 kilometers (150 miles) northeast of Tokyo, the company said.

The amount of the leak, however, was negligible and left no damage to the environment outside the plant, it said. [11-08-06 1059GMT]

The plant shut the boiler which was leaking the steam Friday, the company said.

The plant is currently investigating the cause of the leak, it said.

Tritium is a radioactive isotope of the element hydrogen and is produced in **nuclear** reactors. [11-08-06 1143GMT]

29 septembre 2006 : arrêt du réacteur n°4 pour réparations

UPDATE 1-TEPCO to shut Fukushima nuclear unit for 1 month

Reuters News
LBA

(Adds details)

TOKYO, Sept 29 (Reuters) - Tokyo Electric Power Co. Inc. (TEPCO) said on Friday it plans to begin shutting down the 784,000-kilowatt No. 4 **nuclear** power generation unit at its **Fukushima**-Daiichi plant in northern Japan on Sunday for unplanned maintenance.

TEPCO, Asia's biggest utility, said the unit was operating normally but that it has decided to replace fuel rods as a precaution to ensure stable electricity generation for peak winter demand. The shutdown will last about a month, TEPCO said in a statement.

6 novembre 2006 : arrêt du réacteur n°5 à la suite d'une panne

UPDATE 1-TEPCO shuts nuclear power unit for unplanned checks
Reuters News
LBA

(Adds details)

TOKYO, Nov 6 (Reuters) - Tokyo Electric Power Co. Inc. (TEPCO) has shut its 784,000-kilowatt No. 5 **nuclear** power generation unit at its **Fukushima** Daiichi plant in northern Japan for unplanned checks, a company spokesman said on Monday.

The unit, which had been restarted on Oct. 29 to complete scheduled inspections, was shut down late on Nov. 2, the company said.

TEPCO, Japan's biggest utility, said it had found a crack in part of the power unit following the restart and would investigate the cause. The company said it did not know how long the shutdown would last.

There was no risk of any radioactive leak to the outside, TEPCO said.

5 décembre 2006 : TEPCO découvre de nouvelles falsifications de données dans les rapports de ses centrales

UPDATE 2-Japan TEPCO finds more nuclear data falsification
Reuters News
LBA

(Recasts, adds details after announcement)

TOKYO, Dec 5 (Reuters) - Tokyo Electric Power Co. (TEPCO) , Japan's largest utility, said on Tuesday it had found more past data falsification at its **nuclear** power plants.

TEPCO's contract plant maker last week discovered improper modifications of coolant water temperatures at the No. 1 unit at the **Fukushima** Daiichi plant in 1985 and 1988, the utility said in a statement.

The modified data was used for the most recent mandatory inspections at the plant, which were completed in October 2005.

A TEPCO spokesman said the data modification did not affect the safety of the unit's operations.

TEPCO, which runs three **nuclear** power plants including Kashiwazaki-Kariwa, the world's largest, has faced stiff criticism after a lapse that came to light in 2002.

TEPCO said at that time it had falsified **nuclear** safety inspection data for more than a decade.

Public confidence in Japan's **nuclear** industry has been eroded by TEPCO's cover-ups of safety blunders as well as accidents at other companies' plants.

17 janvier 2007 : arrêt du réacteur n°2 en raison de "problèmes"

Japan TEPCO to shut Fukushima nuclear unit again
Reuters News
LBA

TOKYO, Jan 17 (Reuters) - Tokyo Electric Power Co. Japan's largest utility, said it would shut the No. 2 **nuclear** power generation unit at its **Fukushima** Daiichi plant, northern Japan, later on Wednesday due to problems.

TEPCO began restarting the unit on Tuesday after a shutdown for regular inspections.

1 février 2007 : nouvelles révélations sur les falsifications de données

EDITORIAL / Revelations of problems at N-plants disturbing
Daily Yomiuri
YOMSHI
4

It is shocking to learn that irregularities were rampant at **nuclear** power plants, even though such problems occurred in the past.

An in-house investigation by Tokyo Electric Power Co. revealed that there were many wrongdoings in the past, including the falsification of data concerning equipment inspections--something closely related to the safety of **nuclear** facilities--at TEPCO's Kashiwazaki-Kariwa **nuclear** plant in Niigata Prefecture and its **Fukushima** No. 1 and No. 2 **nuclear** plants in **Fukushima** Prefecture.

Voices asking how such irregularities could have occurred likely will be raised.

In 2002, the then chairman and the president of TEPCO were forced to resign to take responsibility for multiple cases of data manipulation at TEPCO **nuclear** facilities.

This time, following the revelation of the falsification of inspection data for dams by electric power companies, the **Nuclear** and Industrial Safety Agency ordered each electric power company to conduct a survey of its facilities.

TEPCO's investigation found 199 cases at three **nuclear** power plants that possibly violated related laws and ordinances. The number of cases that violated its internal regulations likely was huge.

Among them, an egregious example of data manipulation was found. Although, in 1992, a pump for emergency use was broken at the Kashiwazaki-Kariwa No.1 reactor, TEPCO covered up the malfunction and passed the state inspection.

===

Safety principles flouted

The three principles to ensure the safety of a **nuclear** power plant when a problem occurs are halting operations, cooling the reactor and confining radiation. The pump in question is designed to cool the reactor core in an emergency. TEPCO finagled the government inspection to make it appear that the pump was working normally, and the reactor was kept in operation after the inspection.

The company deserves to be severely criticized for its cavalier attitude toward safety. The government inspections also were riddled with flaws.

However, each case mentioned above happened before the 2002 data manipulation cases. It is likely that these irregularities were overlooked because at that time the government inspections attached more importance to examining documents than interviewing employees of electric power companies. According to TEPCO's in-house investigation, the broken equipment in question was repaired, and data have not been manipulated recently. Therefore, the safety of the facilities has not been compromised, according to TEPCO.

But TEPCO should thoroughly examine why it committed such irregularities, breaking laws and ordinances in the process, and learn a lesson from the experience.

Since the 2002 cases, TEPCO's inspection system has been largely reformed. The system to check plant operations and the preservation of records has been strengthened, and it is difficult for irregularities to happen under the new system. In addition, the government inspection system also was renewed so specialized inspectors can make surprise inspection.

===

Inspections must be stringent

Wrongdoing cannot easily be committed under the present circumstances. But if the safety-first attitude weakens, even the new inspection systems will not fulfill their purposes. Both TEPCO and the government should redouble their resolve to protect safety.

Under the current inspection system, an electric power company must suspend operations of its **nuclear** power plants every 13 months and check specified items. But the government is considering a European-type system, in which the state decides the operational period and inspection items for each **nuclear** plant individually because experience suggests that with that system, power companies can operate **nuclear** power plants more flexibly and maintain safety at a higher level.

However, the plan will not work unless a strict inspection system is in place. TEPCO should leave behind once and for all a corporate culture that condones falsifying inspection data.

(From The Yomiuri Shimbun, Feb. 1, 2007)

18 février 2007 : arrêt du réacteur n°4 en raison d'une radioactivité excessive

Japan Fukushima Reactor Shut Down Due To Radioactivity -Kyodo
Dow Jones International News
DJI

NEW YORK (Dow Jones)--A **nuclear** reactor in **Fukushima** Prefecture automatically shut down Sunday morning after excessive radioactivity was detected, but there was no impact on the surrounding environment, its operator Tokyo Electric Power Co. (9501.TO) said, Kyodo News

reported.

The halt came while Tokyo Electric was starting up the No. 4 reactor of the company's **Fukushima** No. 2 **nuclear** power station in the town of Tomioka, located 210 kilometers from Tokyo, after completing a regular inspection, the report said.

The utility suspects there was a glitch in the reactor's alarm system as its radioactivity monitoring devices in and outside the facility detected no abnormalities, but it is investigating the cause of the incident, the report added.

Tokyo Electric also said a turbine of the same reactor's emergency cooling system automatically shut down on Saturday evening during a test operation. Kyodo reported. It is believed to have been caused by a worker accidentally touching the switch that cuts the input of steam for turning the turbine, it said.

The reactor began starting up from 10 p.m. Friday and was expected to reach its rated output of 1.1 million kilowatts around next Friday, but this is likely to be delayed due to the incidents, the utility said, according to the report. [18-02-07 1056GMT]

1 mars 2007 : découverte de nouvelles falsification dans les centrales de TEPCO

More Unreported Shutdown Cases Found At Tepco Plants-Report
Dow Jones International News
DJI

TOKYO (Dow Jones)--Three additional cases have been found in which Tokyo Electric Power Co. (9501.TO) didn't report to the government emergency shutdowns of its **nuclear** reactors as well as a technical problem, the Mainichi Shimbun reports.

Two of the three cases occurred in February 1992 at the firm's Kashiwazaki-Kariwa **nuclear** power plant in Niigata Prefecture, northern Japan. The company did not report an emergency shutdown as well as the fact that a part of the reactor's cooling device was out of order, the paper said.

The other case, also involving an unreported emergency shutdown, was in November 1985 at the **Fukushima** No. 2 **nuclear** power plant.

-By Tokyo Bureau, Dow Jones Newswires; 813-5255-2929 [28-02-07 2340GMT]

1 mars 2007 : la découverte des falsifications de TEPCO ne devraient pas gêner le fonctionnement de ses centrales

METI: Tokyo Electric Cover-Ups Won't Impact Nuclear Plant Ops
Dow Jones International News
DJI

TOKYO (Dow Jones)--Tokyo Electric Power Co. (9501.TO) won't be required to shut down its **nuclear** power plants for inspections following a discovery that the company failed to report two emergency **nuclear** reactor shutdowns in the 1980s and 1990s, a government official said Thursday.

"These cases happened long time ago. The legal prescription period is three years," the official in

charge of inspecting Japan's **nuclear** power plants said.

Thursday, Japanese media reported that Tepco failed to report the two emergency shutdowns to the government although it is required to according to Japanese law.

Tepco, Japan's largest power utility by revenue and capacity, operates 17 **nuclear** power plants with a total of 17,308 megawatts of power generation capacity, according to a Tepco spokesman.

The emergency shutdowns occurred in 1992 at Tepco's Kashiwazaki-Kariwa **nuclear** power plant in Niigata Prefecture, northeastern Japan, and in 1985 at the company's **Fukushima** No. 2 **nuclear** power plant, also in the northeastern district.

Jan. 31, Tepco discovered 216 falsification cases and reported them to the Ministry of Economy, Trade and Industry.

In response, METI on Feb. 1 ordered Tepco to investigate the newly revealed cases of falsified data at its power plants.

The two unreported emergency shutdown cases were discovered during the course of the investigation.

-By Mari Iwata, Dow Jones Newswires; 813-5255-2929; mari.iwata@dowjones.com

-Edited by Tracy Gan [01-03-07 0442GMT]

12 mars 2007 : TEPCO a dissimulé un arrêt d'urgence d'un de ses réacteurs en 1998

Japan nuclear power firm covered up 1998 emergency shutdown - company sources
BBC Monitoring Asia Pacific
BBCAPP**NGC** BBC Monitoring**GC** CTGBBC

Text of report in English by Japanese news agency Kyodo

Sendai, March 12: Tohoku Electric Power Co. apparently covered up an emergency shutdown of a reactor in 1998 at Onagawa **nuclear** power plant in Miyagi Prefecture, company sources said Monday.

The company did not have records of the incident in its daily operation logbook and failed to report the incident to the government in an apparent violation of a law that requires utilities to swiftly notify it about emergency shutdowns, company officials said, citing recent in-house investigations.

The company cannot be charged over the violation because the three-year statute of limitations has already passed.

The suspected coverup follows one involving Tokyo Electric Power Co., which recently reported to the government that it failed to provide notification about emergency shutdowns at **nuclear** power plants in Niigata Prefecture in 1992 and **Fukushima** Prefecture in 1985.

All the cases occurred due to problems or operational delays when the reactor output was being reduced as workers tried to halt it.

Tohoku Electric the same day explained the investigation results to the **Nuclear** and Industrial Safety Agency under the Ministry of Economy, Trade and Industry.

No other electric power companies have so far been found to be involved in such coverups,

although Tokyo Electric and some other utilities have been charged with manipulation of data on their reactor operations.

Earlier Monday, the managing director of Tohoku Electric, Kunihide Kobayashi, visited the Miyagi prefectural government to apologize.

"I came to know about it last week, and was confirming the fact with people involved. I would like to deeply apologize about this situation," he said.

Miyagi Gov. Yoshihiro Murai said, "It's a grave problem that the company didn't observe the rules. (Tohoku Electric) needs to reflect on it a lot."

According to the company officials, the reactor automatically went into emergency shutdown on June 11, 1998, after a rise in neutrons was detected, while workers were phasing down output for a manual shutdown.

Tohoku Electric conducted checkups of reactor devices to prepare for summer when power consumption typically increases. It restarted power generation on June 17 that year, they said.

Following the data manipulation and coverup cases, the agency has ordered all power companies to conduct investigations to see if there have been any irregularities and provide reports by the end of this month.

Source: Kyodo News Service, Tokyo, in English 0515 gmt 12 Mar 07

20 mars 2007 : TEPCO a dissimulé que des barres de contrôle sont tombées des réacteurs en 1993 et 2000

Tepco: Rods Fell Out Of Reactors At Two Nuclear Power Plants
Dow Jones International News
DJI

TOKYO (Dow Jones)--Tokyo Electric Power Co. (9501.TO), or Tepco, said Tuesday it has discovered that control rods had fallen out of reactors at two of its **nuclear** plants during regular maintenance in 1993 and 2000.

This follows similar cases reported by other Japanese utilities since late last week.

In Tepco's case, the incidents didn't lead to any serious problems, and there was no legal obligation for Tepco to report them to the Ministry of Economy, Trade and Industry, the company said.

According to Tepco, Japan's largest utility by revenue and capacity, two control rods fell out of the No. 3 reactor at its **Fukushima** No. 2 **nuclear** power plant in **Fukushima** prefecture, northeastern Japan, in 1993. The incident occurred because maintenance operations weren't carried out in the right order, said a company official.

Following the incident, Tepco revised its maintenance manual to spell out the proper steps. But during regular maintenance in 2000 at the No. 1 reactor at its Kashiwazaki-Kariwa **nuclear** plant in Niigata prefecture, northeastern Japan, two control rods fell out because the procedure for maintenance operations wasn't strictly followed, said Tepco.

Similar incidents have been reported by other power utilities recently, which prompted Tepco to look into its past operations.

Chubu Electric Power Co. (9502.TO) said Monday that control rods had fallen out of the No. 3 reactor at its Hamaoka **nuclear** plant in central Japan during regular maintenance in 1991. A similar incident took place during regular maintenance in 1988 at Tohoku Electric Power Co.'s (9506.TO)

No. 1 reactor at its Onagawa **nuclear** power plant in northeastern Japan's Miyagi prefecture.

Hokuriku Electric Power Co. (9505.TO) discovered last week a cover-up of an accident at the No. 1 reactor at its Shika **nuclear** power plant in Ishikawa prefecture, western Japan, in June 1999.

During maintenance, control rods fell out from the then-inactive reactor. The fall activated the reactor, and its operation became uncontrollable for about 15 minutes. Hokuriku Electric failed at the time to report the accident to METI, despite being obliged to do so.

Last autumn, METI ordered Japan's 10 regional utilities to look into past cover-ups after several cases of data falsification at hydropower plants had been reported by the companies. The 10 utilities are scheduled to submit reports to METI respectively at the end of March.

The control rod cases were discovered in the course of investigations for the report.

-By Mari Iwata, Dow Jones Newswires; 813-5255-2929; mari.iwata@dowjones.com

22 mars 2007 : les compagnies qui gèrent les centrales nucléaires ne communiquent pas entre elles

N-plants need to share and share alike BY Toshiaki Sato and Tatsuo Nakajima / Yomiuri Shimbun Staff Writers
Daily Yomiuri
YOMSHI
3

If the accidental slippage of control rods in **nuclear** power reactors during regular checkups, which was recently reported by electric power companies, had been immediately announced, the same problem at Hokuriku Electric Power Co.'s plant in 1999 possibly could have been prevented.

The history of similar problems in the past did not serve as a lesson to prevent the criticality accident in the No. 1 reactor of Shika **nuclear** power station in Shikamachi, Ishikawa Prefecture.

This is partly because electric power companies had been reluctant to share such information due to rivalry among manufacturers of **nuclear** reactors.

Hiroyuki Ito, a division chief in charge of the operation of **nuclear** power plants at Tokyo Electric Power Co., admitted at a press conference Tuesday that information did not flow freely between the companies. "If we are accused of lacking awareness of the risk [of control rods slipping], we can't deny it," he said.

In TEPCO's Kashiwazaki-Kariwa **nuclear** power station, manuals to operate valves to control water flows had been revised by 1992 to prevent the occurrence of abnormally high water pressure that could lead to the slippage of control rods in the No. 1 reactor.

But information about the risk was not conveyed to operators of the No. 3 reactor of **Fukushima** No. 2 **nuclear** power station, where the same kind of accident occurred in 1993.

And in 2000, slippage of control rods occurred in the No. 1 reactor of the Kashiwazaki-Kariwa plant due to errors in operating valves to control water pressure, though workers there should have known how to prevent such an accident.

Though TEPCO asked Toshiba Corp. to analyze conditions that could lead to this type of accident, there was no evidence of the company having shared the information throughout the firm.

The company could not even share the information internally, let alone provide the information to other electric power firms to create a system for preventing similar accidents.

Not only TEPCO but also Tohoku Electric Power Co. and Chubu Electric Power Co. did not release such information, thus they could not work together to prevent the accident at the Shika plant.

Electric power companies are not obliged to report accidents in which control rods slip to the government, unless they develop into a criticality accident. Consequently, the firms had a tendency to downplay problems that they did not need to report to the government.

The rivalry between Toshiba and Hitachi Ltd., which manufactured the boiling light water reactors that caused the problems, obstructed the exchange of accident information among the firms.

According to the Japan Atomic Industrial Forum, 32 of 55 **nuclear** reactors in the nation are boiling water reactors. Including joint works, Toshiba was involved in manufacturing 20 of the reactors and Hitachi was involved in building 17 of them.

Mechanical problems are closely tied to manufacturers' technological information and patents. The two companies, and also the electric power industry as a whole, had reasons to be cautious about exchanging information.

An official of an electric power company said, "It felt as if we needed to obtain permission to talk about anything if it could be perceived as sharing information beyond the walls of manufacturers and electric power firms."

Spokesmen for both Toshiba and Hitachi said their firms did not share such accident information with rival companies, in principle.

But the atmosphere has gradually changed since 2002, when TEPCO was found to have concealed other problems in its **nuclear** power plants.

The companies concerned have improved their information databases about problems in **nuclear** power plants. In April last year, manufacturers of boiling water reactors and electric power companies established a liaison council, but it is still early days for this initiative.

Prof. Yotaro Hatamura at Kogakuin University said: "It's just a decade ago when people in industrial circles began recognizing the importance of accumulating data on past accidents. At the time of the slippage problems, we couldn't blame a failure to learn from mistakes."

However, Hatamura added that it was possible for the highest-ranking official in each of the plants to decide that the accident should be reported to others because a similar problem could occur in other **nuclear** plants.

All five cases of control rods slipping took place inside boiling water reactors, due to errors in operating water pressure controlling valves.

The **Nuclear** and Industrial Safety Agency and electric power firms have instructed workers in **nuclear** plants to reexamine manuals and strictly follow work procedures.

But it is doubtful whether this measure alone can prevent serious problems. As long as there is human involvement in the process, **nuclear** power plants should be designed on the assumption that human errors cannot be avoided completely.

"Though we'll work at paying attention to processes for the time being, in the future facilities in the plant will be designed to eliminate human errors," Ito said.

Four of the 32 boiling water reactors in the nation are improved types, in which control rods are moved up and down by screws. In the four reactors, a slippage accident like those recently found cannot occur.

22 mars 2007 : TEPCO a dissimulé des accidents critiques en 1978 et 1999

UPDATE 1-Japan TEPCO may have had nuclear criticality

Reuters News
LBA

TOKYO, March 22 (Reuters) - Tokyo Electric Power Co. (TEPCO) said on Thursday it may have had a **nuclear** power plant "criticality" incident in 1978.

Another utility admitted last week it had a similar incident in 1999 that was concealed.

A spokesman for TEPCO, Japan's biggest utility, said fuel rods fell in a reactor core of a plant in **Fukushima**, northern Japan, the No.3 unit at its **Fukushima** Daiichi plant, and may have caused self-sustaining **nuclear** fission, or criticality.

"We cannot deny the possibility that the incident caused **nuclear** reaction," a TEPCO spokesman said.

TEPCO also said it had discovered two other cases of similar mishandling of **nuclear** fuel rods in 1979 and 1980 but confirmed that they did not cause **nuclear** fission.

TEPCO was holding a briefing from 6 p.m. (0900 GMT).

Utilities are now reporting such incidents to the government after the Trade Ministry ordered them in November to investigate power plant records and report the findings by the end of March, a process the ministry said would help improve the industry's safety controls.

TEPCO's admission comes after Hokuriku Electric Power Co. said last week it had covered up an incident in 1999 that caused "criticality", an unintended self-sustaining **nuclear** fission chain reaction, that lasted for 15 minutes.

LEAD 1 Japon - Incident "critique" dans une centrale en 1978
22 mars 2007
Reuters - Les actualités en français
REUTFR**LA** Français

TOKYO, 22 mars (Reuters) - La compagnie d'électricité japonaise Tepco (Tokyo Electric Power) a déclaré jeudi qu'un incident avait atteint un stade critique en 1978 dans l'une de ses centrales nucléaires et avait peut-être duré dans les sept heures trente.

L'incident - une réaction de fission **nucléaire** spontanée - n'avait fait aucun blessé et n'avait pas provoqué de radiations, a déclaré Nagao Suzuki, directeur général des services de gestion des centrales, lors d'un point de presse.

Il n'existe pas d'archives sur cet incident, qui a été révélé au grand jour par les déclarations de deux anciens ouvriers de la centrale, située à **Fukushima** dans le nord du Japon.

Une autre compagnie avait reconnu la semaine dernière avoir connu un incident de ce type en 1999, qui avait été tenu secret.

Les compagnies d'électricité doivent désormais signaler de tels incidents au gouvernement, maintenant que le ministère du Commerce leur a ordonné, en novembre, d'enquêter sur les archives des centrales et de communiquer toute découverte d'ici la fin mars, processus qui, selon le ministère, permettra d'améliorer les contrôles de sécurité dans cette branche. /GWB/EF

5 avril 2007 : les entreprises qui gèrent le nucléaire japonais ont commis plus de 10 000 infractions

Over 10,000 irregularities committed by Japan's power utilities
Kyodo
Kyodo News
KYODO

TOKYO, April 5 -- Japan's 12 electric power firms have committed irregularities involving power generation facilities some 10,650 times in a total of 306 different types, an industry group said Thursday.

The total breaks down to 450 times in 97 types involving **nuclear** power generation, 1,200 times in 128 types involving thermal power generation and 9,000 times in 81 types involving hydro power generation.

Tsunehisa Katsumata, chairman of the Federation of Electric Power Companies of Japan, made the announcement at a meeting of the governing Liberal Democratic Party.

Katsumata, who is president of Tokyo Electric Power Co., told the LDP meeting that the power industry will file with the government as early as Friday a set of measures aimed at preventing a recurrence of such irregularities involving power generation.

The package will incorporate measures to strengthen training and education of staff from power firms and their subcontractors and also to tighten efforts to share information among the utilities and equipment makers, Katsumata said.

He offered an apology at the LDP meeting for "causing worries and trouble to many people" through the series of mistakes and coverups of incidents involving power generation.

In reports to the government last Friday, the 12 power firms said they have found irregularities of 306 types through their probes conducted since last November.

The 12 are Hokkaido, Tohoku, Tokyo, Chubu, Hokuriku, Kansai, Chugoku, Shikoku, Kyushu and Okinawa electric power companies as well as Electric Power Development Co., known as J-Power, and Japan Atomic Power Co.

In its report to the government, Tokyo Electric Power said it concealed the emergency shutdown of a reactor at its **Fukushima** No. 1 **nuclear** power plant in 1984.

Tokyo Electric said in the report that the reactor shut down because an increase of neutrons sparked temporary criticality in the reactor. The company said it deliberately chose not to report the incident to the government.

==Kyodo

SE TERRE
Le Japon découvre des incidents cachés BY TEMMAN Michel
14 avril 2007
Libération
LBRT**NGC** Libération - All**GC** CTGLIB**ED** 1e EDITION
010
8067**LA** Français
Libération. Une publication de SNPC - France. Tel: 33 (1) 42 76 17 89 http://www.liberation.fr.

Avec un parc **nucléaire** en plein essor, le pays s'inquiète des dysfonctionnements.

La polémique sur l'insécurité **nucléaire**, toujours à vif au Japon, est relancée. Les responsables de deux compagnies d'électricité, Chubu Electric Power et Tohoku Electric Power, ont reconnu avoir sciemment étouffé des incidents survenus dans leurs centrales nucléaires (au centre et au nord du Japon), l'un en 1988, l'autre en 1991. Avouant les avoir délibérément "masqués", ils ont été sévèrement blâmés par les autorités.

Le ministère de l'Economie et de l'Industrie a de son côté confirmé, huit ans après les faits, l'existence d'un autre accident, en 1999 au nord du pays, à la centrale de Shika gérée par Hokuriku Electric Power. Suite à une fausse manoeuvre, une réaction **nucléaire** en chaîne s'est produite de façon incontrôlée durant quinze minutes. Le système d'arrêt d'urgence n'a pas fonctionné, mais le réacteur a pu être stoppé manuellement. Le directeur de la centrale a alors décidé de dissimuler l'accident. Les agents de la sûreté **nucléaire** n'ont découvert cet épisode que récemment et ont depuis ordonné l'arrêt du premier réacteur pour vérification, le second étant hors-service depuis juillet à cause d'une turbine défaillante.

Bien qu'en cours de modernisation avec le développement de centrales de 3e génération, le parc **nucléaire** nippon suscite donc des inquiétudes. Car ce n'est pas la première fois que de telles défaillances sont tues. Ces dernières semaines, d'autres accidents nucléaires, survenus dans deux centrales du géant de l'électricité Tepco (en 1993 à **Fukushima** et en 2000 à Kashiwazaki Kariwa), ont été dévoilés au public. Le programme **nucléaire** nippon, très lié à la France (via Areva), est ambitieux. En 2002, l'archipel s'est engagé à accroître de 30 % son volume d'électricité **nucléaire** d'ici à 2010 (afin de disposer alors d'environ 80 réacteurs). Du coup, l'Agence pour la sûreté **nucléaire** réfléchit à la façon de renforcer sa coopération avec les acteurs de la filière, autant que les cadres de contrôle de la sécurité des installations. Les Japonais n'oublient pas la tragique série d'accidents graves survenus dans leur pays. En particulier dans les centrales de Tsuruga en janvier 1981 (278 irradiés) ou de Tokaimura en mars 1997 (37 irradiés) et septembre 1999 (2 tués, 600 irradiés, 320 000 réfugiés), ou encore de Mihama en août 2004 (5 morts et 6 blessés)...

Tokyo de notre correspondant

20 avril 2007 : le gouvernement demande des vérifications plus strictes

Gov't demands stricter checks at 7 nuclear plants to stem coverups
Kyodo
Kyodo News
KYODO

TOKYO, April 20 -- The government ordered four power companies Friday to conduct additional checks, along with regular inspections, on their seven **nuclear** power plants to try to prevent the recurrence of data falsification scandals involving **nuclear** reactors in Japan.

The order was part of a 30-point set of measures the Ministry of Economy, Trade and Industry unveiled the same day to ensure safety at Japanese **nuclear** plants and rebuild public trust in atomic power after two power companies concealed "criticality" accidents at their reactors.

Officials at the **Nuclear** and Industrial Safety Agency, an arm of the ministry, will also carry out special monitoring and supervision of the seven plants.

The agency suspects nine reactors at the seven plants have violated rules under the Electric Utility Law or the **nuclear** reactor regulation law.

The seven are Tokyo Electric Power Co.'s **Fukushima** No. 1 and No. 2 plants in **Fukushima**

Prefecture and the Kashiwazaki-Kariwa plant in Niigata Prefecture, Hokuriku Electric Power Co.'s Shika plant in Ishikawa Prefecture, Chugoku Electric Power Co.'s Shimane plant in Shimane Prefecture, Japan Atomic Power Co.'s Tsuruga plant in Fukui Prefecture and Tokai plant in Ibaraki Prefecture.

Japan's 10 regional power companies plus Japan Atomic Power and Electric Power Development Co. have reported 316 cases of irregularities at their **nuclear**, hydraulic and thermal power plants that they had found in their probes since November following an order by Economy, Trade and Industry Minister Akira Amari.

Of the 316, 98 cases involve **nuclear** power generation, including the occurrence of a self-sustaining **nuclear** chain reaction, or a criticality reaction, at Hokuriku Electric's Shika plant in 1999 and Tokyo Electric's **Fukushima** No. 1 **nuclear** plant in 1978, respectively.

==Kyodo

27 avril 2007 : alerte sur l'air conditionné sur les réacteurs n°2 et 4

Tokyo Elec Blames Air Conditioner For Reactor Shutdown -Kyodo
Dow Jones International News
DJI

NEW YORK (Dow Jones)-- Tokyo Electric Power Co. (9501.TO) said Friday that an air conditioner was responsible for the automatic shutdown in February of a **nuclear** reactor in **Fukushima** Prefecture after supposedly detecting excessive radioactivity, Kyodo News reported Friday.

Draft from the air conditioner at the No. 4 reactor of the **Fukushima** No. 2 **nuclear** power station in the town of Tomioka hit the alarm device's measurement gauge and created static due to friction, thus causing the apparatus to malfunction, the company was quoted as saying.

Tokyo Electric said it's the first time such a problem has come to light and that it'll examine whether a similar situation exists at its other **nuclear** reactors, Kyodo reported.

According to the utility, the problem occurred with the alarm system's device for monitoring radioactivity levels inside the main steam pipe, the report said.

The reactor automatically stopped Feb. 18 after the alarm went off for purportedly detecting abnormally high levels of radioactivity after it was started up following a regular inspection and was preparing to generate electric power, the utility was quoted as saying.

According to the report, the move was determined to be a glitch as the reactor's other radioactivity monitoring devices detected no abnormalities.

Tokyo Electric said it's taking measures such as adding grounding wires to reduce static, Kyodo reported. [27-04-07 1218GMT]

14 juin 2007 : arrêt du réacteur n°3 en raison d'une fuite d'eau

Japan TEPCO to shut nuclear unit for inspection
Reuters News
LBA

TOKYO, June 14 (Reuters) - Japan's Tokyo Electric Power Co. said on Thursday it would start

manually shutting down the No. 3 **nuclear** power generation unit at its **Fukushima** Daiichi plant in northern Japan from later in the evening for an unplanned inspection. A water leak was found and although that did not have an immediate impact on the **nuclear** unit, the company decided to shut down, Japan's biggest utility said in a statement.

16 juillet 2007 : " Les centrales nucléaires japonaises conçues pour résister aux pires séismes"

Les centrales nucléaires japonaises conçues pour résister aux pires séismes (ACTUALISATION, PAPIER D'ANGLE) BY ROC

Agence France Presse

AFPFR**NGC** Agence France Presse (AFP)**GC** CTGAFP**LA** Français

TOKYO, 16 juil 2007 (AFP) -

Le séisme qui a frappé lundi le **Japon** a provoqué un incendie et une légère fuite radioactive dans la **centrale nucléaire** de Kashiwazaki-Kariwa, une des plus grandes du monde, qui comme ses semblables au **Japon** est normalement conçue pour résister aux pires secousses.

Le nucléaire revêt une importance stratégique au **Japon**, la deuxième économie mondiale qui est presque totalement dépourvue de ressources énergétiques telles que le pétrole, le charbon ou le gaz naturel.

Les 57 réacteurs nucléaires japonais fournissent environ 35% des besoins en électricité du pays, et le gouvernement cherche à augmenter cette proportion à 40% à l'horizon 2010 pour réduire la dépendance énergétique.

Mais dans un Archipel qui subit chaque année 20% des tremblements de terre les plus violents enregistrés dans le monde, la construction de réacteurs nucléaires doit obéir à des normes de sécurité draconiennes.

D'autant que les sentiments anti-nucléaires restent extrêmement vifs au **Japon** depuis les bombardements atomiques de Hiroshima et Nagasaki en 1945.

Propriété du géant Tokyo Electric Power (Tepco), Kashiwazaki-Kariwa fournit en électricité la capitale située à 250 km plus au sud.

Avec ses sept réacteurs d'une capacité totale de 8.212 mégawatts, elle est l'une des centrales les plus puissantes du monde.

Elle est aussi située à quelques kilomètres de l'épicentre du séisme de magnitude 6,8 sur l'échelle de Richter qui a pulvérisé des dizaines de maisons et endommagé de nombreuses routes lundi. Un

précédent tremblement de terre meurtrier, de même magnitude, avait déjà dévasté la région en octobre 2004.

Un incendie s'est déclaré dans un transformateur électrique, ainsi qu'une fuite radioactive jugée sans gravité par Tepco.

"Nous pouvons confirmer que de l'eau contenant de la matière radioactive a fui", a reconnu un porte-parole de la compagnie, Shougo Fukuda.

"Mais la fuite est bien en dessous des niveaux qui pourraient affecter l'environnement", a-t-il assuré, ajoutant qu'aucun employé n'avait été exposé à des radiations.

Comme tous les réacteurs nucléaires du **Japon**, ceux de Kashiwazaki-Kariwa sont équipés de capteurs sismiques, reliés à un dispositif qui arrête immédiatement le système dès qu'une secousse survient.

De plus, les centrales nucléaires japonaises sont obligatoirement construites sur un sol rocheux, selon des normes géologiques extrêmement strictes, afin de minimiser les secousses. Celles situées au bord de la mer sont aussi protégées par des murs anti-**tsunami**.

Après le tremblement de terre de Kobe (ouest), qui avait atteint 7,2 sur l'échelle de Richter en 1995, faisant plus de 6.400 morts mais aucun dommage aux réacteurs de la région, la Commission de sécurité nucléaire japonaise avait durci les normes architecturales des centrales, qui dataient de 1978.

Depuis lors, tous les réacteurs en activité sont censés résister à des séismes d'au moins 7,75 sur l'échelle de Richer.

Dans certaines régions particulièrement à **risques**, les centrales sont conçues pour résister à des méga-secousses pouvant atteindre une magnitude de 8,25. L'usine de retraitement de combustible de Rokkassho (nord), actuellement en phase de tests, résisterait à un séisme de 8,5.

La confiance du public japonais a toutefois été écornée après les récents aveux de compagnies d'électricité qui ont dissimulé aux autorités plusieurs incidents, parfois graves, entre 1978 et 2002.

De plus, en mars 2006 et pour la toute première fois, un tribunal japonais a ordonné l'arrêt d'un réacteur nucléaire, inauguré quelques jours plus tôt à Shika (centre), en donnant droit aux riverains qui accusaient la compagnie électrique exploitante d'avoir sous-estimé les **risques** sismiques.

La compagnie Hokuriku Electric Power a toutefois fait appel, ce qui lui permet de poursuivre l'exploitation de sa centrale.

roc/agr/ai eaf

SE Monde

Explication; Les centrales nucléaires face aux risques sismiques

18 juillet 2007

La Croix

Le violent séisme intervenu lundi dans la région de Niigata, au centre du **Japon**, qui a fait neuf victimes et de nombreux dégâts, rappelle aux Japonais leur vulnérabilité face au **risque** sismique. Cinquante dysfonctionnements ont été identifiés dans la **centrale nucléaire** de Kashiwazaki, touchée par le tremblement de terre, rapportait hier l'agence de presse Kyodo News citant des responsables de l'entreprise chargée de la centrale.

Le **Japon** est-il bien protégé contre les séismes ?

Cet État, qui subit près de 20 % des plus gros séismes de la planète, est le pays le plus réactif face à cette menace. En 1995, le tremblement de terre de Kobe, d'une magnitude de 7,2 sur l'échelle de Richter, faisait 6 400 victimes. Cette catastrophe a poussé les autorités nippones à accélérer le plan antisismique. Si la maîtrise technique progresse, la sécurisation des grandes agglomérations reste problématique. En particulier le **risque** d'incendie, qui serait responsable de la moitié des victimes en cas de séisme. Tokyo, mégalopole de 20 millions d'habitants, est particulièrement soumise à un tel **risque** car située au cœur d'une zone en subduction. Le « Big One » nippon, méga-séisme qui menace la capitale, est susceptible de frapper à tout instant.

Les centrales japonaises sont-elles garanties contre les **risques** sismiques ?

L'incendie survenu lundi dans la centrale de Kashiwazaki-Kariwa, l'une des plus grandes du monde, n'aurait provoqué aucune conséquence radioactive sérieuse, mais un tel incident inquiète l'opinion publique et les mouvements écologistes, et ravive un débat récurrent au **Japon**. Composé de 55 centrales, le parc nucléaire japonais apparaît pourtant relativement sûr. Ainsi lors du séisme de Kobe, il n'y a eu aucun dommage dans les centrales nippones ; tous les réacteurs sont censés résister à une secousse de magnitude 7,75 sur l'échelle de Richter. Dans certaines régions sensibles, le seuil a été élevé à 8,25. Un règlement draconien encadre le choix des sites, les centrales doivent ainsi être construites sur des sols rocheux, qui minimisent les secousses. Les centrales situées en bord de mer sont équipées de murs anti-**tsunami**, menace qui intervient lorsque l'épicentre du séisme est sous-marin.

Y a t-il un **risque** sismo-nucléaire la France ?

Beaucoup moins aiguë qu'au **Japon**, la menace existe en France. Le réseau associatif « Sortons du nucléaire » annonçait ainsi en 2003 que 34 des 54 réacteurs n'étaient pas adaptés au **risque** sismique. Mais selon Monique Sené, physicienne nucléaire et chercheuse au CNRS, le parc nucléaire français est correctement protégé. Les réacteurs internes ont été régulièrement renforcés et les centrales sont auscultées à intervalles réguliers (tous les dix ans), notamment l'enceinte et la cuve du réacteur qui ne se remplacent pas. Elle précise que les centrales de première génération (d'une capacité de 900 MW), les seules vraiment sensibles à un tel **risque**, pourraient fermer d'ici quelques années si leur sécurisation posait problème. Le **risque** reste fonction de l'activité sismique. Plusieurs des 19 sites nucléaires français sont situés sur des zones potentiellement à **risques**, notamment ceux du centre-ouest (Chinon et Civaux) et ceux situés sur le sillon rhodanien. Fessenheim, la centrale française la plus ancienne (1977), a ainsi connu deux séismes. En 2004, une secousse de magnitude 5,8 n'avait causé aucun dégât.

Japon: des doutes sur la sûreté nucléaire BY --par Eric Talmadge--
18 juillet 2007
AP French Worldstream

KASHIWAZAKI, Japon (AP) - La communauté internationale et la population locale s'inquiètent

de la situation à Kashiwazaki, dans le nord de Japon. La centrale **nucléaire** de la ville a fermé ses portes mercredi, la fuite d'eau radioactive constatée après le violent séisme de lundi s'étant avérée plus importante qu'on ne le pensait initialement.

De plus, environ 400 fûts contenant des déchets faiblement radioactifs se sont renversés, et une quarantaine d'entre eux se sont ouverts, mais aucune radiation n'a été détectée à l'extérieur du site, a affirmé mercredi Tokyo Electric Power (TEPCO), l'entreprise chargée des installations. Elle n'avait fait état que d'une centaine de barils la veille, mais le chiffre a été révisé à la suite de nouvelles inspections, a expliqué le porte-parole Tsutomu Uehara.

Le maire de la ville a ordonné la fermeture de la centrale pour des raisons de sécurité, étant donné les dysfonctionnements signalés après le tremblement de terre. Elle rouvrira une fois si la sécurité y est assurée.

L'Agence internationale de l'énergie atomique (AIEA) a demandé au Japon de mener une enquête transparente et approfondie sur les accidents qui se sont produits sur le site pour voir si l'on peut en tirer des leçons pour les autres centrales, notamment à l'étranger.

Le président de TEPCO Tsunehisa Katsumata s'est rendu sur place mercredi et a relevé le "désordre" régnant dans la centrale, alors que sa société avait détaillé mardi soir une liste de plusieurs dizaines de dysfonctionnements constatés après le séisme d'une magnitude de 6,8.

Lors d'une visite organisée ensuite pour le patron du Parti communiste japonais, Kazuo Shii, et quelques journalistes, il était possible de voir des fissures dans les routes menant à la centrale, ainsi que des barrières renversées. "C'est impardonnable", a lancé Kazuo Shii à Masakazu Minamidate, directeur-adjoint de TEPCO, qui gère la centrale de Kariwa. "Vous dites qu'il n'y a pas de fuite, avant de savoir vraiment (...) Le retard au niveau de l'information était particulièrement inexcusable!"

Tsunehisa Katsumata a présenté ses excuses pour les dysfonctionnements constatés, tout en soulignant que les mesures de sécurité avaient été respectées. "Nous mènerons une enquête complète. Mais je pense que nous avons fondamentalement confirmé que nos mesures de sécurité ont fonctionné", a-t-il déclaré. "Il est difficile que tout se passe parfaitement."

Par ailleurs, TEPCO a annoncé que la fuite d'eau radioactive constatée après le séisme était 50% plus importante que les premières estimations, mais toujours sous les niveaux de dangerosité autorisés. Cette eau s'est déversée en mer du Japon. "Nous avons fait une erreur en calculant le montant qui s'est déversé dans l'océan. Nous nous excusons et faisons une correction", souligne TEPCO dans un communiqué.

Akira **Fukushima**, directeur-adjoint de l'organisme gouvernemental de surveillance du **nucléaire**, a confirmé que ses inspecteurs n'avaient pas détecté d'anomalies supérieures au niveaux de dangerosité autorisés sur le site.

Peu convaincu, Hiroshi Aida, le maire de Kashiwazaki, la ville de 93.500 habitants qui abrite la centrale et qui se trouve à seulement 19 kilomètres de l'épicentre du séisme, a quand même ordonné la fermeture du site. "Je suis inquiet", a-t-il confié. "Il serait difficile de relancer les opérations actuellement (...) La sécurité de la centrale doit être assurée avant sa réouverture".

La centrale Kariwa, installée à Kashiwazaki, est la plus importante au monde en termes de production électrique. Les 55 centrales nucléaires du Japon fournissent environ 30% des besoins en électricité du pays.

19 août 2007 : craintes sur la résistance des centrales japonaises en cas de tremblement de terre

Shimane Nuclear Power Plant Quake Resistance To Be Reassessed-Kyodo

Dow Jones International News
DJI

NEW YORK (Dow Jones)-- Chugoku Electric Power Co. is planning to reassess the quake resistance capability of its shoreline Shimane **Nuclear** Power Station that it says is confirmed to be located close to an area with 10 active fault lines under the sea, company sources said Saturday, according to Kyodo.

Chugoku Electric had been aware of the existence of the fault lines ranging from 6 to 51 kilometers in length but had considered their impact on the **nuclear** power station would be insignificant, given their distance from the station and their scale, the sources said,. according to Kyodo.

The utility, which serves a western Japan region, has determined that detailed research using undersea sonar probe devices is now necessary "in order to retain the trust of local people," a company executive said, following the unexpected damage done to Tokyo Electric Power Co.'s Kashiwazaki-Kariwa **Nuclear** Power Station by a powerful earthquake in July.

The move follows an earlier decision by Tokyo Electric to conduct sonic and structural surveys of undersea faults near Kashiwazaki-Kariwa as well as **Fukushima** No. 1 and No. 2 **nuclear** stations.

The company, based in the city of Hiroshima, has also decided to conduct research on another active fault, in the land area, after an expert suggested that it could be more than twice as long as initially thought.

The **nuclear** power station - the only one located in a prefectural capital - has two reactors. The No. 1 reactor with an output capacity of 460,000 kilowatts went on-stream in March 1974. The No. 2 reactor with an 820,000 kw capacity started operating in 1989. The third, now under construction, is scheduled to start running in 2011.

While the two existing reactors are powered by uranium, the company is planning to use a plutonium-uranium mix fuel in a new experiment at the No. 2 reactor.

Chugoku Electric now believes it would take a lot longer to complete its quake resilience research for the **nuclear** power station than the original timeline of finishing its assessment by the year-end, the sources said. [18-08-07 2322GMT]

SE ASIA PACIFIC

21 août 2007 : le gouvernement autorise TEPCO a retarder les vérifications de sécurité sur son réacteur n°3

Tepco postpones work at Fukushima-1 nuclear unit BY Takeo Kumagai
Platts Oilgram News
PON
2
Volume 85, Issue 164

Japan's Ministry of Economy Trade and Industry has allowed Tokyo Electric Power Company to further delay conducting additional safety checks at its 780 MW No. 3 reactor at the **Fukushima**-1 **nuclear** power plant in northeastern Japan to August 31, a Tepco official said August 20.

Tepco was originally scheduled to conduct the safety checks in late July but was allowed to postpone it to August 20. The latest delay comes as Tepco has moved several of its technical staff from **Fukushima**-1 to the earthquake-hit 8.212 GW Kashiwazaki-Kariwa **nuclear** power plant, the

official said, adding that the postponement had nothing to do with the heat wave that has hit the country.

Meanwhile, Tepco still plans to shut the 1.10 GW No. 6 **nuclear** reactor at **Fukushima**-1 for maintenance starting October 1, the official said. This unit was originally scheduled for maintenance in early August, but METI allowed Tepco to delay the maintenance following Kashiwazaki-Kariwa's shutdown in mid-July. The shutdown has knocked out close to half of the company's total **nuclear** power generation capacity of 17.31 GW.

Japan's summer power demand normally peaks between July and September. The drop in **nuclear** power generation has forced Japan's biggest power utility to boost its thermal power generation using feedstocks including direct-burning crudes, low sulfur waxy residue, low sulfur fuel oil, LNG and coal.

Separately, Kansai Electric August 17 idled the 826 MW No. 2 reactor at its Takahama **nuclear** power plant for a three-month maintenance program. Kansai Electric now has eight **nuclear** units with a combined capacity of 8.102 GW in operation. This accounts for 83% of its total power generation capacity of 9.768 GW over 11 units in western Japan.

20 septembre 2007 : fuites radioactives à la suite d'un tremblement de terre de magnitude 6.8

LEAD: July quake more powerful than many plants are thought to withstand
Kyodo
Kyodo News
KYODO

TOKYO, Sept. 20 -- The devastating quake that caused leaks of minute amounts of radioactive substances at Japan's biggest **nuclear** power station in Japan in July was more powerful than many **nuclear** power facilities are envisaged to withstand, reports submitted by the country's **nuclear** power companies to the government showed Thursday.

The July 16 temblor with a magnitude of 6.8 is known to have registered larger ground motions than Tokyo Electric Power Co. had anticipated at the time of designing reactors at the quake-hit Kashiwazaki-Kariwa **nuclear** power plant in Niigata Prefecture on the Sea of Japan shoreline.

The reports to the government show that the July quake was more powerful than what at least seven **nuclear** power facilities were envisaged to be able to withstand at the time of their designing.

The seven are the spent fuel reprocessing plant in Aomori Prefecture of Japan Nuclear Fuel Ltd., the Onagawa **nuclear** power plant in Miyagi Prefecture of Tohoku Electric Power Co., the **Fukushima** No. 1 and No. 2 plants of Tokyo Electric, the Tokai No. 2 plant in Ibaraki Prefecture and the Tsuruga plant in Fukui Prefecture, both of Japan Atomic Power Co., and the Monju fast-breeder reactor in Fukui Prefecture of the state-run Japan Atomic Energy Agency.

The **nuclear** power companies, however, rule out any safety problems, saying their facilities are actually designed with some leeway to withstand quakes that are stronger than those anticipated. The ground motions of the July quake were within the range of anticipations for the designing of those facilities, they said.

All of the **nuclear** power companies said studies are under way to reconfirm safety of their facilities against quakes.

The country's 10 utility firms, Japan **Nuclear** Fuel and the Japan Atomic Energy Agency filed the reports that compared ground motions from the July quake with their facilities.

The temblor that struck central Niigata Prefecture on July 16 left 11 people dead and more than 1,000 people injured.

The Kashiwazaki-Kariwa plant with an output capacity of more than 8 million kilowatts has remained shut down since the quake.

A team of experts from the International Atomic Energy Agency inspected the damaged Kashiwazaki-Kariwa plant in early August.

On Aug. 17, the U.N. **nuclear** watchdog released a report saying there is no visible significant damage to the Kashiwazaki-Kariwa **nuclear** power plant. The report suggested, however, that a detailed examination should continue to be carried out on the power plant's reactor vessel, core and fuel.

==Kyodo

4 octobre 2007 : TEPCO améliore sa communication à la suite du tremblement de terre

Tepco enhancing communications after quake BY Ann MacLachlan, Chicago
Nucleonics Week
NUC
1
Volume 48, Issue 40

Tokyo Electric Power Co. is looking at ways to improve communications as it sorts through the lessons learned from the July 16 Niigata Chuetsu-Oki Earthquake that affected the seven-unit Kashiwazaki-Kariwa **nuclear** power station, a senior Tepco official said late last month.

The measures to be implemented include setting up a direct telephone line to a local fire station from the main control room, said Akira Komori, Tepco executive officer and general manager of the utility's **Nuclear** Quality & Safety Management Department.

Tepco has also realized the importance of gathering all available information following a plant event in the same place as soon as possible, so it can be "sorted" and communicated to the public in a timely manner, he told the World Association of **Nuclear** Operators' biennial general meeting in Chicago September 25.

The company will also set up an emergency control room in an earthquake-resistant building, he said.

Komori echoed other reports by Tepco as well as a report to senior regulators in Vienna last month by Akira **Fukushima** of the **Nuclear** and Industrial Safety Agency, or NISA. **Fukushima** said the plant had behaved essentially well during the earthquake and that the event validated Japan's conservative earthquake safety standards (NW, 27 Sept., 4). Komori noted, in particular, that the largest dynamic force in play — the maximum acceleration at the unit 1 reactor building basemat — was 680 gal, 2.5 times the design acceleration response of 273 gal. However, because of static force requirements, safety-significant buildings and structures "are made three times as strong as general buildings," he said.

Earthquake surveys are now under way on the site and surrounding areas to identify active faults to determine the probability of recurrence of the same magnitude of earthquake, he said. They will be

completed by March. A new design basis ground motion will be defined and seismic safety of structures, systems and components will be calculated, and engineering work reinforced "if necessary," he said.

At the same time, "precise inspections" of plant systems, structures and components is to be completed by January, said Tepco President Tsunehisa Katsumata.

For the moment, all seven Kashiwazaki-Kariwa BWRs remain down pending investigations, but experts indicated last month that NISA would likely adopt a staggered approach to approving restart because the units were differently affected.

Beyond the technical lessons of the earthquake, Komori said, the event has driven home the need for better communication and public information.

The earthquake struck Niigata prefecture on a national holiday, with an epicenter only 16 kilometers from the plant site. While the four units in operation scrammed successfully and were brought into cold shutdown by Tepco's "skilled operators," Komori said, three quake-induced events caused public concern that has led Tepco to rethink how it handles emergencies.

Kashiwazaki-Kariwa staff experienced delays in obtaining help from the local fire brigade to put out a fire in a house-load transformer, and initial actions to put out the fire didn't work because fire protection piping was damaged due the earthquake, he said. Video footage showing black smoke spewing from the transformer was shown worldwide, attracting public attention and concern, Komori said.

As part of countermeasures, besides the direct phone connection to local firefighters, Tepco has now deployed a site chemical fire engine and formed its own firefighting corps that is on "'round-the-clock standby," he said.

In a second event, very slightly contaminated water leaked from the spent fuel pool at unit 6 through a cable penetration to the sea. The dose was estimated at 2 x 10-9 milliSievert, well below the authorized limit, but there was a delay in reporting the leakage to authorities, he said. The delay, he said, was caused by "a lack of radiation technicians after the earthquake." In addition, because the water puddle was in an area that was not radiation-controlled, plant personnel did not initially realize it was radioactive.

The third event that caught the public's attention was a release of radioactive iodine and particulate matter from the main turbine condenser of unit 7, due to a delay by operators in manually stopping the turbine gland steam ventilator, he said. There again, the dose was estimated at 2 x 10-7 mSv, well below the limit.

Komori said that to prevent recurrence of delays in reporting radioactive releases, Tepco has now posted a radiation technician at all stations on a 24-hour basis. It also has enhanced the performance of its emergency support center, including installing more reliable communications facilities, and ordered plant staff to report the possibility of radioactive material leakage to authorities, even if the leakage is in non-controlled areas.

Easy reporting

Komori said that after the quake, operators and engineers were "focused" on bringing the operating units to cold shutdown, as stipulated in procedures, and not on communicating information to the outside.

Moreover, he said, while "we had a lot of information" on the state of the plant, operators were not able to access the emergency preparedness room set up to allow rapid communications between the plant and the local community, regulators and central government, because of damage from the earthquake. In addition, he said, "the public relations person" — who was besieged by questions from the media — "wasn't fully aware of the whole situation." Tepco "wasn't able to sort out all the information to give to the media," he said.

Komori said that henceforth, Tepco will attempt to "gather all the information possible [after an incident] and sort it so it can be distributed in an easy manner."

He said plant staff will be instructed to "run to the spot, collect all the information and sort it as soon as possible," acknowledging, "I'm sure this will be a big challenge."

Komori echoed introductory remarks to the WANO gathering by Katsumata, who pledged the utility would keep international counterparts informed of its "progress" in learning the lessons of the earthquake and upgrading the plant, through the Japan **Nuclear** Technology Institute and Tepco's own website.

Katsumata said that "based on the results" of all the investigations, Tepco would modify the station "to make it more durable."

12 octobre 2007 : arrêt du réacteur n°2 en raison d'une panne sur l'échangeur

RIM BUNKER NO.5658 MARKET NEWS --TEPCO to shut Fukushima Dai-ichi No.2 reactor on glitch
Rim Bunker Intelligence Daily
RIMBNK**NGC** Rim Intelligence (English)**GC** CTGRME

Tokyo Electric Power Co (TEPCO) said on Thursday that it would manually shut down the 784-MW No.2 **nuclear** reactor at its **Fukushima** Dai-ichi power station

Thursday afternoon for safety checks after finding a glitch at the heat exchanger. The details including the length of the closure were unknown. With the closure of the reactor, the number of TEPCO's operating reactors would be down to 5, out of its 17 reactors, with a combined capacity of 4,868-MW, accounting for 28.1% of its total.

24 mars 2008 : TEPCO demande au gouvernement de prolonger de 10 ans l'exploitation du réacteur n°4, qui fonctionne depuis 29 ans

Plant Life Management at the Unit No. 4 of Fukushima Daiichi Nuclear Power Plant
Targeted News Service
TARGNS

TOKYO, March 24 -- Tokyo Electric Power Company issued the following news release:

Our Unit No. 4 of **Fukushima** Daiichi **Nuclear** Power Plant (Boiling Water Reactor; rated output of 784,000 kW) began its commercial operation in October, 1978 and has been operating for 29 years as of October 12th, 2007.

On October 11th, 2007, we submitted reports on "Plant Life Management*2" and "Long-Term Maintenance Plan*3" for this Unit to the Ministry of Economy, Trade and Industry based on the Rules of Installment and Operations of Commercial **Nuclear** Reactors*1.

Following the on-site inspection by the central government, we resubmitted the reports with the

revision complying with the inspection notes on March 7th, 2008. Today, the Ministry of Economy, Trade and Industry released the examination results on "Plant Life Management" and "Long-Term Maintenance Plan".

We will appropriately implement the Long-Term Maintenance Plan for the next 10 years in addition to the regular maintenance activities for the maintenance and management of the mentioned Unit based on the reports reviewed by the central government.

We will continue with ongoing improvement efforts, accumulating operating experience and enhancing the knowledge base so that they can be reflected to the Long-Term Maintenance Plan.

Appendix: Overview of Plant Life Management and Long-Term Maintenance Planning for the Unit 4 of **Fukushima** Daiichi **Nuclear** Power Plant(http://www.tepco.co.jp/en/press/corp-com/release/betu08_e/images/080324e1.pdf)

*1: Rules of Installment and Operations of Commercial **Nuclear** Reactors

It is mandated that a technical assessment on aging effect on important equipment and structures for **nuclear** safety (Plant Life Management) be completed before the 30th anniversary of the beginning of the commercial operation date of **nuclear** plants and that a 10-year action plan to maintain the reactor facilities (Long-Term Maintenance Plan) be drawn up based on the "Rules for Installment and Operations of Commercial **Nuclear** Reactors."

In addition, the "Guideline for Implementing Plant Life Management of Commercial **Nuclear** Reactors (June 2007)" requires utilities to submit the Plant Life Management report and Long-Term Maintenance Plan to the central government between the anniversary dates of 28 years and 29 years of commercial operation date of the **nuclear** reactor.

*2: Plant Life Management

It identifies potential aging effects on safety-significant equipment and structures of **nuclear** power plants and conducts technical assessment of their soundness, as well as identifying further events to be added and reporting the results when needed. These assessments need to be revisited within 10 years.

*3: Long-Term Maintenance Plan

A specific plan identifying the coverage, methods and schedule for the items to be added to the ongoing maintenance activities in the next 10 years based on the results of Plant Life Management.

TNS MD66-MD66-080810-1748604 18MASHMaria

31 mars 2008 : les centrales nucléaires doit être prêtes à affronter des tremblements de terre plus importants

Japanese nuclear plants to be prepared for bigger quakes
Kyodo
Kyodo News
KYODO

TOKYO, March 31 -- Japanese **nuclear** plants, which have been reviewed under a new government guideline for seismic design, will all be prepared for bigger earthquakes than before, power company reports to the government showed Monday.

Power companies have revised upward their estimates of the most powerful earthquakes that may hit **nuclear** plants. Tokyo Electric Power Co., for instance, anticipates that the potential intensity of such quakes at its **Fukushima** No. 1 and No. 2 plants in **Fukushima** Prefecture could reach up to 600 gals, compared with the previous 370 gals.

Other utilities, including Hokkaido Electric Power Co., Kansai Electric Power Co. and Kyushu Electric Power Co., have also similarly upgraded their estimates up to 600 gals from around 400 gals at some of their **nuclear** plants, including those in Tomari, Mihama and Genkai, after reviewing faults in their vicinity, according to the reports.

The interim reports were submitted Monday to the **Nuclear** and Industrial Safety Agency under the Ministry of Economy, Trade and Industry.

The government's quake resistance guideline for **nuclear** plants was revised in 2006 for the first time since its creation in 1978. It requires tougher safety analysis and standards.

The power companies said they did not find any safety problems in their investigations.

But the latest reports proved that the companies had underestimated earthquake shocks for many years.

Japan Power Atomic Co., for instance, said a fault at its Tsuruga plant in Fukui Prefecture is about 25 kilometers long and capable of triggering a quake with a magnitude of around 6.9.

Japan Power Atomic had not taken into account this active fault in its previous safety assessment.

==Kyodo

SE EAST ASIA: Japan

10 avril 2008 : TEPCO envisage une croissance de 1% annuel jusqu'en 2017. Projet de construction de deux nouveaux réacteurs à Fukushima

Tepco reveals long-term plans
Power in Asia
PWRA
24
Issue 501

The Tokyo Electric Power Company (Tepco) has projected that its power sales will grow by an average of 1% a year from 2006 to 2017. The company's 2008 business management plan also said that, to meet the increased demand, it would continue to "promote the best mixture of energy sources centered on **nuclear** power."

The company said the central role of **nuclear** power was based on the need to "ensure stable power supply and energy security, with overall consideration of factors such as economics, operability and environmental compatibility." But it acknowledged that, in the nearer term, the continued closure of the Kashiwazaki-Kariwa **nuclear** power station following the July 2007 earthquake would require greater use of other energy resources.

In the near term Tepco said that it was projecting summer peak period demand for 2008 of 61,100 megawatts (MW). To meet this level it noted that it planned to secure 64,700 MW of capacity through the commissioning of new power stations, the restart of mothballed plants, the rescheduling of maintenance dates, and power purchases from captive generators and other electric power companies.

"In addition, according to the situation, we may ask our customers to conserve electricity," the company said. It noted that the available peak capacity did not include any contribution by Kashiwazaki-Kariwa.

The new capacity will include the planned entry into service in July 2008 of the 500-MW Kawasaki Unit 1-2 and 500-MW Futtsu Unit 4-1 liquefied natural gas-fired plants. The 500-MW Kawasaki Unit 1-1 set is subsequently scheduled to enter operation in February 2009.

Meanwhile the mothballed plants expected to resume operations include two 350-MW fuel oil and crude oil-fired sets at Yokosuka, and a 350-MW blast furnace gas and fuel oil-fired set at Kashima Kyoudou.

In the longer term the projected increase in Tepco electricity sales from 287.8 TWh in the 2006 fiscal year to 322.3 TWh in the 2017 fiscal year would require the introduction of more new capacity, including new **nuclear** reactors, the company said. Given this context, Tepco said that one of its key goals was "establishing much safer and securer **nuclear** power stations that are resistant to disaster and are based on solid trust with local residents."

The new **nuclear** reactors scheduled to enter operation during the period include the two 1,380-MW generators which will form units seven and eight at the **Fukushima** Daiichi complex, and the 1,385-MW first and second units at Higashidori. The four units are all projected to enter service between October 2014 and the end of 2018.

Also included in the construction program is 1,600 MW of coal-fired capacity at Hitachinaka and Hirono, which Tepco said is scheduled for operation in the 2013 fiscal year. Meanwhile 4,000 MW of LNG-fired plant is scheduled to enter service between July 2008 and 2018 at the Futtsu-4 and Kawasaki-1 and -2 complexes, while pumped storage facilities with 2,820 MW of capacity are scheduled to enter operation at Kannagawa by 2018, Tepco said.

Tepco also noted that the wholesale electricity generator J-Power is planning to put two facilities into operation within the region. These include the commissioning in July 2009 of the 600-MW Isogo-2 coal-fired plant and the commissioning in 2012 of the 1,383-MW Ohma **nuclear** reactor.

25 mai 2008 : un travailleur de la centrale, atteint d'un cancer consécutif à une irradiation, débouté de sa demande d'indemnisation

Court nixes ex-N-plant worker's suit

Daily Yomiuri

YOMSHI

2

The Tokyo District Court has rejected a damages suit filed by a former worker at a **nuclear** plant in **Fukushima** Prefecture, in which the plaintiff sought about 44 million yen in compensation for developing multiple myeloma, a kind of blood cancer, due to exposure to radiation.

Mitsuaki Nagao, a former **nuclear**-related firm employee from Osaka who worked at the Tokyo Electric Power Co.'s **Fukushima** No. 1 **nuclear** power station, filed the lawsuit against TEPCO.

Handing down the ruling, presiding Judge Hidetaka Matsui said, "The plaintiff's condition cannot be recognized as multiple myeloma."

In the lawsuit, the causal connection between the exposure to radiation and the condition also became a point of contention.

While the government accepted a causal connection and Nagao's claim for workers accident

compensation, the ruling rejected the government's position, saying, "In the case of low-dose exposure, no causal connection between the disease and such exposure has been proved."

4 juin 2008 : des mineurs employés pour effectuer des inspections de centrales nucléaires

Toshiba subcontractor illegally hires teens for nuke plant inspection

Kyodo

Kyodo News

KYODO

SENDAI, June 4 -- Toshiba Corp. has said eight people aged below 18 were illegally hired by a subcontractor for regularly conducted inspections of three **nuclear** power plants and six of them worked in restricted areas with risk of exposure to radiation.

The Tokyo-based electronics giant said in a news release dated Tuesday it suspects those who were engaged in hiring the eight may have forged documents to obtain permits to work in the restricted areas of the plants belonging to Tokyo Electric Power Co. and Tohoku Electric Power Co.

The Labor Standards Law bans an employer from hiring workers aged below 18 to work in a place that exposes them to radiation. Permits issued by designated institutions are also required for working in a restricted area.

Toshiba said it has reported the problem to local labor ministry offices as well as to the power companies. The ministry offices, suspecting law violations, are investigating the cases.

The six workers performed support work including transport of supplies at the No. 1 **Fukushima** power plant of Tokyo Electric and Tohoku Electric's power stations in Miyagi and Aomori prefectures as part of regular checkups conducted since October 2007.

According to the **Nuclear** Safety Commission of Japan, the **Fukushima** plant had a total of 8,208 people engaged in work at restricted areas in fiscal 2004.

Of them, 923 were Toshiba employees and the other 7,285 subcontracted staffers. The latter was exposed to a higher risk of radiation than the former.

==Kyodo

4 juin 2008 : redémarrage du réacteur n°5, arrêté à la suite de "problèmes techniques"

Japan's TEPCO to restart nuclear unit after trouble

Reuters News

LBA

TOKYO, June 4 (Reuters) - Japan's biggest utility, Tokyo Electric Power Co , said on Wednesday it would restart the 784-megawatt No.5 **nuclear** generator at its **Fukushima**-Daiichi plant from later in the day.

The generator had been shut since May 25 due to technical problems. (Reporting by Osamu Tsukimori)

10 juin 2008 : arrêt du réacteur n°5 en raison d'une panne de turbine

RIM CRUDE NO.3336 MARKET NEWS --Japan TEPCO manually shuts down Fukushima Daiichi No5 reactor

Rim Crude Intelligence Daily

RIMCRD**NGC** Rim Intelligence (English)**GC** CTGRME

Japanese largest power provider Tokyo Electric Power Co, or TEPCO, manually shut down the 784-MW No5 reactor at its 4,696-MW **Fukushima** Daiichi **nuclear** power station at 8:15 hours PM Monday, a company spokesman said. The move came as TEPCO decided to investigate into the cause of a turbine trouble. The turbine automatically shut down on Sunday, as an alarm related to generator protection sounded during the process of reactivation. Later on, TEPCO switched on the turbine again for checkup, but the unit shut down by itself on another alert concerning generator protection. With the unit off line, TEPCO is running eight out of 17 reactors, or a combined capacity of 7,528-MW out of 17,308-MW. The utilization rate declined to 43.5%. Besides the **Fukushima** Daiichi reactors, TEPCO owns the 4,400-MW **Fukushima** Daini and 8,212-MW Kashiwazaki-Kariwa **nuclear** power stations. All reactors at Kashiwazaki-Kariwa are currently out of operation in the aftermath of a huge earthquake on Jul 16, 2007.

14 juin 2008 : fuite radioactive à la suite d'un tremblement de terre

At least 6 dead, 11 missing in Japan's 7.2 quake BY By ERIC TALMADGE

Associated Press Writer

Associated Press Newswires

APRS

KURIHARA, Japan (AP) - Military helicopters and fire department rescue squads raced to find 11

people missing after a deadly earthquake in mountainous northern Japan sent whole hillsides crashing down Saturday, killing at least six and injuring more than 140.

The 7.2-magnitude quake triggered several major landslides, blocking roads and stranding about 100 bathers at a hot spring resort. Eleven people were missing as darkness fell, further hampering the search crews, who had to hike through mountain trails and dig their way to the worst-hit areas.

[...]

At a **nuclear** power plant in **Fukushima**, about 60 miles (100 kilometers) away, the jolt splashed a small amount of radioactive water from two pools storing spent fuel. Trade and Industry Ministry official Yoshinori Moriyama said there was no leakage outside the plant.

[...]

UPDATE 2-Small radioactive water leak within TEPCO plant

14 juin 2008

Reuters News

LBA

(Adds geothermal, hydro plants update)

TOKYO, June 14 (Reuters) - Water containing a small amount of radiation leaked within a Tokyo Electric Power Co**nuclear** power plant in northern Japan, where a strong earthquake hit on Saturday, company officials said.

The water leaked at TEPCO's **Fukushima** Daini plant from a pool in a warehouse which keeps disposal materials of radioactive waste, an official at **Fukushima** Daini said.

"No water has leaked outside of the warehouse," the official said, adding that TEPCO has confirmed that there was no impact on the environment. TEPCO's two **nuclear** plants in **Fukushima**, including **Fukushima** Daini, were operating normally, Asia's top power company said.

The two plants have a combined power capacity of 9,096 megawatts, enough to supply half of the greater Tokyo region.

TEPCO's Kashiwazaki-Kariwa **nuclear** power plant, the world's biggest, has been shut down since a major earthquake last July.

Beside TEPCO, **nuclear** power facilities run by Tohoku Electric Power Co in northern Japan were also operating normally after the powerful earthquake.

"We haven't found any problems at our Onagawa and Higashidori **nuclear** plants after the earthquake," an official at Tohoku Electric said.

A strong earthquake with a preliminary magnitude of 7.2 jolted northern Japan at 8:43 a.m. on Saturday (2343 GMT on Friday), killing three people. As many as 10 people are missing.

Tohoku's Onagawa plant in Miyagi prefecture has three units with a combined capacity of 2,174 megawatts. The official said one unit at Onagawa has been closed for routine maintenance, while two other units were operating normally.

The official said no problem has been found at its 1,100 megawatt Higashidori **nuclear** plant. The plant is in Aomori prefecture and has been closed for maintenance.

A Japanese oil refining facility located in northern region were unaffected, but small geothermal and hydroelectric power facilities were shut down after the earthquake.

Japan's top refiner Nippon Oil Corp's 145,000 barrel-per-day Sendai refinery was not damaged.

The quake had no impact on operations because the refinery has been shut since earlier this month for scheduled maintenance, a Nippon Oil official said.

Another official at Tohoku Electric said its 28.8-megawatt geothermal power plant in Akita prefecture resumed operations in the early afternoon, around five hours after the initial quake.

Tohoku Electric's seven hydroelectric power plants in Iwate, Miyagi and Akita prefectures with a total capacity of 19.64 megawatts have remained shut, and it was unclear when they would return to operations pending the inspections, the official added.

Electricity wholesaler J-Power's 14.6 megawatt hydroelectric plant and prefecture-run 6.8-megawatt hydro plant in Iwate Prefecture have remained shut after the quake, the Ministry of Economy, Trade and Industry said. (Reporting by Chisa Fujioka, Osamu Tsukimori and Chikafumi Hodo; editing by David Stamp)

Japon: Petite fuite d'eau radioactive après le séisme (entreprise)

14 juin 2008

Agence France Presse

AFPFR**NGC** Agence France Presse (AFP)**GC** CTGAFP**LA** Français

Une petite quantité d'eau radioactive s'est échappée d'un centre de stockage d'un site **nucléaire** samedi après un violent séisme dans le nord du Japon, mais sans présenter de danger pour la population, a annoncé l'entreprise gérant la centrale.

La compagnie d'électricité japonaise Tokyo Electric Power (Tepco) a déclaré que 14,8 litres d'eau avait fui d'un réservoir dans lequel du matériel radioactif était entreposé, à proximité du réacteur deux de la centrale **nucléaire** de **Fukushima**, dans la préfecture du même nom (nord).

"Mais le niveau de radiation de l'eau est bien loin du niveau pouvant potentiellement endommager l'environnement", a assuré un porte-parole de l'entreprise, ajoutant que le réacteur continuait de fonctionner.

Un violent séisme de 7,2 sur l'échelle de Richter a frappé samedi le nord du Japon. Son épicentre était situé au sud de la préfecture d'Iwate, proche de celle de **Fukushima**.

La plus puissante centrale **nucléaire** du monde, située à Kashiwazaki-Kariwa (centre du Japon), est arrêtée depuis juillet 2007 à cause d'un violent séisme de magnitude 6,8.

si/sct/pn/php

11 juillet 2008 : ralentissement du réacteur n°5 pour réparation

Japan's TEPCO to cut nuclear unit output temporarily

Reuters News

LBA

TOKYO, July 11 (Reuters) - Japan's Tokyo Electric Power Co said on Friday it would reduce the power output of the 784,000-kilowatt No.5 **nuclear** power generator at its **Fukushima**-Daiichi plant to 390,000 kw from 11 a.m. Saturday (0200 GMT) for an unplanned repair. A company spokesman said the repair is expected to take only about six hours and the power output will be gradually raised to full capacity from Saturday evening. (Reporting by Osamu Tsukimori)

18 juillet 2008 : le gouvernement autorise TEPCO à repousser les opérations de maintenance sur le réacteur n°3

Japan's TEPCO granted nuclear maintenance delay

Reuters News

LBA

TOKYO, July 18 (Reuters) - Tokyo Electric Power Co (TEPCO) said on Friday it has been granted permission by the government to delay the start of planned maintenance on its 1.1 million kilowatt **Fukushima**-Daini No.3 **nuclear** generator.

Japan's biggest utility applied on Monday to delay the start of scheduled maintenance by 17 days to Sept. 6 as it prepares to enter the peak summer demand season. [ID:nT150388]

Japan's **Nuclear** and Industrial Safety Agency requires utilities to shut each unit for inspections every 13 months, but utilities can apply to extend that period between inspections.

TEPCO has said both of its two **nuclear** plants in **Fukushima** Prefecture would operate fully from July 21 to early September. [ID:nT332517] (Reporting by James Topham)

SE PERSPECTIVE

20 juillet 2008 : une longue liste de procès contre les centrales nucléaires au Japon

Nuclear Litigation in Japan; There is a surprisingly long list of legal actions involving nuclear power in Japan

Bangkok Post

BKPOST

8

Before any decision to go **nuclear**, Thailand should study the case histories of countries that have long been using **nuclear** energy. Japan has not had as rosy a path on the way to becoming one of the largest of **nuclear** operators in the world as those advocating **nuclear** power in Thailand would have us believe.

There is a long list of court cases. Nishio Baku, a co-director of the Citizen **Nuclear** Information Centre in Japan explains that some of the lawsuits demanding that construction or operation of a **nuclear** facility be stopped. The lawsuits are administrative cases, where the government is the defendant and the petitioner demands that the approval for the facility be annulled.

Others are civil court cases, where the company is the defendant and the petitioner demands that construction and/or operations be terminated.

However, there are also a number of cases in which citizens are the defendants. These might include cases in which anti-**nuclear** activists have been charged with illegal entry or violence at a **nuclear** site. In the case of criminal suits, the Public Prosecutor lays the charges.

According to Nishio, some cases are heard by a Summary Court, but the majority are heard by a District Court. In either case, if a party is dissatisfied with the decision, they may appeal to the regional High Court. If there is still dissatisfaction it is sometimes possible to take the matter to the Supreme Court, but this is only allowed under certain circumstances. These are: where there is a constitutional issue involved; where a particularly important law is involved; or where the decision goes against a Supreme Court precedent.

Some lawsuits go on for a long time. The Tokai II case has so far been the longest. It began in 1973 and reached a final conclusion in 2004, when the Supreme Court rejected the case.

Civil Cases

Recently civil suits have been the main type of litigation involving **nuclear** power plants. Most of the cases demand the termination of operations of a particular **nuclear** station, and have different and reasoning behind the demands. More details could be studied at: http://cnic.jp/english/newsletter/nit104/nit104articles/nit104court.html and http://cnic.jp/english/news/newsflash/2006/shika30Mar06.html

The latest case is when the Kanazawa District Court upheld a suit for termination of operation of the Shika-2 reactor (ABWR 1,358 MW). The suit was filed by 135 plaintiffs from 16 prefectures in August 1999 and the decision was made on March 24, 2006.

Yukio Yamaguchi, another CNIC co-director, gave the history behind this case. "In 1988, 100 plaintiffs lodged a case against the Shika-1 reactor (540 MW BWR). Their case was rejected by the

District Court in 1994. They appealed and the High Court rejected their demands in 1998. However, although they lost their case, they extracted an acknowledgement that **nuclear** power plants are a negative legacy for future generations. They appealed to the Supreme Court, but their case was rejected in 2000. The Shika-2 victory therefore came 18 years after the plaintiffs first lodged a case against the Shika **nuclear** power plant."

However, the Hokuriku Electric, the plant operator, has appealed to the High Court. As long as there is an appeal pending they can continue to operate the plant.

Another example of the litigation is the **Fukushima** II-3 case, which followed an accident involving a recirculation pump in 1989. The case was an attempt to stop the company from recommencing operations. It was claimed that pieces of metal had been left in the damaged reactor and components were simply patched up.

The Takahama action was an attempt to prevent reactor number 2 from being restarted after a routine inspection discovered problems in 46% of the pipes in the steam generator. The generator was subsequently replaced in its entirety. In the latter of these cases, despite rejecting the petitioners' challenge, the court warned of the danger of the pipes bursting. No appeal was lodged.

Nishio concluded that even in those cases where the residents/citizens have lost, they have managed to extract masses of useful documents from the power companies and the government.

"We should also not forget that the court cases, via the mass media, have drawn attention to the issues and thus helped to shape public opinion to become more critical of **nuclear** energy," he wrote in the newsletter Nuke Info Tokyo No. 104 (Jan-Feb 2005).

6 août 2008 : arrêt du réacteur n°3 pour "réparations"

Japan's TEPCO to shut nuclear unit for repair work

AFX Asia

AFXASI

TOKYO, Aug 6 (Reuters) - Tokyo Electric Power Co said on Wednesday it plans to shut its 1,100-megawatt **Fukushima**-Daini No.3 **nuclear** generator for an unplanned inspection. Japan's top utility said in a statement it will start lowering power output from around 6 p.m. on Aug. 8, with the unit to be shut down around 4 a.m. on Aug. 9. The unit is scheduled to be restarted around Aug. 16-17 after repair work, a company spokesman said. (Reporting by Osamu Tsukimori)

MMMM

21 octobre 2008 : des officiels français participent à un exercice d'alerte sur le réacteur n°3

French government takes part in annual nuclear disaster prevention drill

毎日新聞社

Mainichi Daily News

Aiwmdm

This year's annual **nuclear** disaster prevention drill was carried out Tuesday with the participation of the French government, the first ever participation by a foreign administration, it's been announced.

As part of the drill, which was carried out at the Tokyo Electric Power Co.-owned **Fukushima** No. 1 **Nuclear** Power Plant on Tuesday, there was a test emergency relayed to the 7,500 registered French nationals living in Japan. The drill will also be held on Wednesday.

Fears of a **nuclear** accident among French **nuclear** industry insiders have grown following the closure of the Kashiwazaki-Kariwa **Nuclear** Power Plant after 2007's earthquake in Niigata Prefecture, and the French Embassy in Japan is calling for a "robust communication system between our two governments."

"Information on **nuclear** accidents is reported to the International Atomic Energy Agency, but there's no network in place for informing foreign embassies in Tokyo, so we want to make the best use of this experience," said the Ministry of Economy, Trade and Industry's **Nuclear** and Industrial Safety Agency.

The drill simulates the breakdown of the reactor's No. 3 cooling unit and a subsequent radioactive material leak. Various government agencies, including the prime minister's office, about 2,700 local residents and two French **nuclear** safety experts took part.

17 février 2009 : création de 7 centres de crise à proximité des centrales nucléaires

7 command centers for nuclear accidents asked to improve safety.

Japan Energy Scan

JPES

0

TOKYO, Feb. 13 Kyodo

The internal affairs ministry Friday advised seven facilities that are to serve as command centers in the event of a **nuclear** accident to improve their safety systems, citing vulnerability to radiation exposure.

The seven are among 22 command centers across Japan operated by the industry and science

ministries. Each has been built within 20 kilometers of a **nuclear** power plant so that it can expeditiously deal with an emergency.

A recent inspection of 13 centers by the Ministry of Internal Affairs and Communications found that seven of them would have problems preventing radioactive contamination in the event of an accident, exposing people inside the facilities to the risk of radiation.

The internal affairs ministry thus asked the Ministry of Economy, Trade and Industry and the Ministry of Education, Culture, Sports, Science and Technology to improve the facilities' safety systems.

The centers in question are located in seven prefectures -- Hokkaido, Aomori, Miyagi, **Fukushima**, Shizuoka, Ishikawa and Ehime.

Five of them were found to have a problem in their ventilation systems. Measures to shield the buildings from radiation are inadequate at all of them.

The inspection also covered the information system that is to be used by the command centers for the evacuation of residents, and found that population and other data on residents have not been updated in Hokkaido, Aomori, Kanagawa and Ehime prefectures since fiscal 2005. The internal affairs ministry asked the science ministry to remedy the situation.

24 février 2009 : arrêt du réacteur n°1 à la suite d'un "problème technique"

Japan's Tepco shuts 460 MW Fukushima1 nuclear reactor on glitch BY kuma

Platts Commodity News

PLATT

Tokyo (Platts)--24Feb2009/1130 pm EST/430 GMT

Tokyo Electric Power Co. shut the 460 MW No. 1 **nuclear** reactor at its **Fukushima**-1 **nuclear** power plant in northeastern Japan in the early hours Wednesday after finding a technical glitch, the company said.

Tepco was forced to shut the No. 1 **nuclear** reactor at its **Fukushima**-1 **nuclear** power plant as reactor was in the process of moving toward normal operations, following its restart on February 21 after ending its maintenance, the company said.

It was immediately not clear when the company will be able to restart the unit as it probes the cause of glitch, the company added.

With shutdown of the No. 1 reactor, Tepco has seven units operating with a combined capacity of 6.75 GW, which accounts for 39% of its total **nuclear** capacity of 17.31 GW at 17 units across Japan.

Japan is nearing the end of its peak winter power demand season, which runs over December-February and during this period, the severity of the cold has a direct impact on kerosene, fuel oil and LNG consumption in the country.

However, Japan's power sector has seen weakened demand this year, particularly from industrial users, due to the global economic slowdown, sources said.

Tepco was forced to increase fuel, crude oil and LNG consumption after an earthquake on July 16, 2007, led to the shutdown of its Kashiwazaki-Kariwa plant, which had a capacity of 8.212 GW over seven units.

Takeo Kumagai, takeo_kumagai@platts.com

10 mars 2009 : l'utilisation de plutonium pourrait enfin être d'actualité

Pluthermal Power Finally In Sight, But Issues Abound

Nikkei Report

NKRP

TOKYO (Nikkei)--Japan finally appears set to launch pluthermal (plutonium-thermal) power generation, with Kyushu Electric Power Co. slated to commence such operations in October and several other firms expected to soon follow suit.

However, given major construction delays and other issues, there is slim chance the industry can achieve its collective goal of bringing online 16-18 pluthermal reactors by the end of fiscal 2010.

Pluthermal power generation uses mixed-oxide (MOX) fuel, which is derived from spent **nuclear** fuel.

On Monday, Hokkaido Electric Power Co. (9509) filed for government approval to install a pluthermal reactor. Meanwhile, Shikoku Electric Power Co. (9507) and Chubu Electric Power Co. (9502) plan to begin such operations by the end of fiscal 2010.

For its part, Kansai Electric Power Co. (9503) is getting its act together after two fiascoes: In 1999, a scandal involving the falsification of safety data by British **Nuclear** Fuels Plc, which made MOX fuel for Kansai Electric at the time, and in 2004, a fatal accident involving a burst steam pipe at the No. 3 reactor of the plant in Mihama, Fukui Prefecture.

In January, Melox SA of France began producing MOX fuel using uranium and plutonium for Kansai Electric; production is scheduled to be completed by the end of this year. The fuel will be used for pluthermal power generation at reactor Nos. 3 and 4 of the plant in Takahama, Fukui Prefecture.

Tokyo Electric Power Co. (9501), which aims to launch pluthermal operations at three to four reactors, has also encountered major delays. The firm had obtained local approval for pluthermal activity at the No. 3 reactor of the No. 1 plant in **Fukushima** and the No. 3 reactor of the Kashiwazaki-Kariwa plant in Niigata Prefecture. But then it was discovered that the firm had falsified data in 2002, and local governments demanded halts.

However, town councils around the **Fukushima** plant subsequently dropped their opposition; Tepco now only needs to obtain prefectural approval. Regardless, starting up three to four pluthermal reactors by fiscal 2010 appears to be a tall order, particularly given that resources are being used to get the Kashiwazaki-Kariwa plant back online after an earthquake shut it down in July

2007.

Meanwhile, construction issues forced Electric Power Development Co. (9513) to postpone the planned launch of pluthermal operations in Oma, Aomori Prefecture, to November 2014.

As bothersome as these assorted delays might be, industry insiders are most troubled by the saga of the reprocessing plant that Japan **Nuclear** Fuel Ltd. is building in Rokkasho, Aomori Prefecture. The launch of this facility, which will turn spent **nuclear** fuel into MOX fuel, was in early February postponed by six months until August. This, the 16th delay, extends the extra wait to 10 years. Meanwhile, construction costs have tripled to 2.2 trillion yen.

Given the delays and the fact that candidate sites for the disposal of radioactive waste have yet to be decided upon, it seems that Japanese pluthermal operations are still not quite ready for prime time.

-- Translated from an article written by Nikkei staff writer Ryoichi Emura

6 août 2009 : arrêt du réacteur n°3 à la suite de la découverte d'une "anomalie"

Tepco to shut No. 3 Fukushima1 nuclear unit briefly Saturday BY kuma

Platts Commodity News

PLATT

Tokyo (Platts)--6Aug2009/939 pm EDT/139 GMT

Japan's Tokyo Electric Power Co. plans to shut the 784 MW No. 3 reactor at its **Fukushima**-1 **nuclear** power plant in northeastern Japan for a brief maintenance Saturday after discovering an abnormality, a company spokesman said Friday.

The reactor could be restarted as early as late Sunday, the spokesman said.

Tepco had restarted the No. 3 reactor July 7 after ending scheduled maintenance which began on February 24.

With the shutdown of the No. 3 reactor, Tepco will briefly have nine units running with a combined capacity of 8.57 GW, which accounts for 49.5% of its total **nuclear** capacity of 17.31 GW at 17 units across Japan.

Meanwhile, Tepco has yet to receive consent from local authorities to restart commercial operations of the No. 7 reactor at its earthquake-hit Kashiwazaki-Kariwa **nuclear** power plant in northwestern Japan after abnormalities were recently discovered, the spokesman said.

The company had been poised to restart commercial operations at the No. 7 reactor last month, pending approval from the country's Ministry of Economy, Trade and Industry. However, the METI inspection was postponed after abnormalities at the reactor were found in the early hours of July 23 -- the day of the planned inspection.

On July 31, METI approved Tepco's proposed measures to rectify the abnormalities at the reactor after the company submitted documents to the ministry and local authorities, company officials said.

Tepco plans to take the reactor to up to 100% of capacity from the current 80% after approval from the authorities, sources close to the matter said.

Tepco would then have to run the reactor at full rates for at least a week to allow METI to conduct the previously postponed final inspection, the sources added.

Taking into account the time needed for the procedure to be completed, the commercial restart of the reactor now appears unlikely to happen before the second half of August, the sources added.

The company is also awaiting local approval for the restart of its 1.356 GW No. 6 reactor, after making a formal request July 3, following METI approval June 29.

However, local approval for the No. 6 reactor is not likely to come until the company has restarted commercial output at the No. 7 unit, sources said.

Once approval has been received, Tepco is due to complete a conditional restart of the No. 6 reactor and carry out final tests, which are expected to take about 45 days, enabling it to potentially restart commercial operations in September.

The No. 6 and the No. 7 reactors would be the first units to be restarted at the site.

News of **nuclear** power plant outages and restarts in Japan are closely watched as they can lead to an increase or decrease in demand for feedstocks such as fuel oil, crude and LNG for power generation.

Takeo Kumagai, takeo_kumagai@platts.com

Power drops at Fukushima nuclear reactor after malfunction

Kyodo

15 octobre 2009

Kyodo News

KYODO

TOKYO, Oct. 15 -- Power output from a **nuclear** reactor in **Fukushima** Prefecture dropped to about a third of its normal level Thursday after a pump shutdown caused apparently by an abnormality in electric circuits, Tokyo Electric Power Co. said, adding there was no radiation leak during the incident.

One of the two recirculation pumps at the No. 4 reactor of the **Fukushima** No. 2 **nuclear** power plant automatically stopped Thursday afternoon when workers were checking a device that supplies electricity to the pumps, according to the utility company.

The incident led power output to fall from the normal level of 1.1 million kilowatts to 360,000 kilowatts. Circuits in the electricity supply device appeared to have shorted out, company officials

said.

The company will investigate the cause of the incident while continuing to operate the reactor using the remaining pump.

==Kyodo

SE Features

23 novembre 2009 : quel avenir pour le nucléaire au Japon ?

Japan's Back-End Dilemma: Running Out of Time

Uranium Intelligence Weekly

URIW

Officially, Japan is committed to closing the **nuclear** fuel cycle, but as a practical matter it stubbornly refuses to close. Meanwhile, spent fuel is piling up at reactor sites and the interim storage site at the Rokkasho reprocessing plant is almost full, forcing utilities to search for other alternatives. The search for a permanent high-level waste (HLW) site is proving elusive.

Closing the fuel cycle requires, of course, reprocessing, a market for the recovered uranium and plutonium, such as fast breeder reactors or as mixed-oxide (MOX) fuel, and long-term storage for spent fuel and HLW. Of these elements, only the plan to burn MOX fuel in conventional **nuclear** reactors has made any progress, and after years of delays.

When its Genkai-3 reactor went critical using a partial load of MOX fuel on Nov. 5, Kyushu Electric Power hailed the occasion as the beginning of the pluthermal program. Yet other elements of closing the fuel cycle are behind schedule or stalled, and the launch of the MOX program did not go as smoothly as hoped: Kansai Electric Power Co. (Kepco) was forced to reject four of the 16 MOX assemblies that it planned to install at its Takahama 3 and 4 reactors in Fukui prefecture, for failing to meet quality control standards (UIW Oct.19 p4).

The delays are beginning to ripple through Japan's **nuclear** industry as spent fuel from the country's 10 reactors fills up on-site spent fuel pools. Current estimates put the total on-site storage at 12,320 metric tons versus total overall capacity of 19,240 metric tons, with at least two sites very near full capacity. Kepco's Takamatsu plant, for example, has 1,130 metric tons in storage versus a capacity of 1,630 metric tons. Tepco's Kashiwazaki-Kariwa facility has 2,140 metric tons in storage with a capacity of 2,910 metric tons.

Meanwhile, Japan **Nuclear** Fuels Ltd. (JNFL), which operates the planned reprocessing plant at Rokkasho in northern Japan, recently announced that beginning in 2010 it would not accept additional spent fuel at the facility's spent fuel storage pond, forcing utilities to reconfigure their storage pools or find locations willing to let them build interim pools.

The Rokkasho storage pond is designed to hold 3,000 metric tons of spent fuel, evenly divided between waste from boiling water reactors and from pressurized water reactors. With test operations suspended at the reprocessing plant, the storage pool will be at about 95% of capacity by the end of this year. JNFL has been accepting the spent fuel in anticipation of commercial reprocessing.

In theory, the Rokkasho plant is completed and should be operational, but it has been hamstrung by

persistent problems with the vitrification equipment that turns the separated high-level liquid waste into glass for long-term storage (UIW Feb.21,p6). This summer JNFL announced another delay -- the seventeenth, for those counting – in start-up until this time next year.

The unusually long delay this time is intended to allow time to fix the problems with the vitrification technology once and for all, then, allowing for a three-month testing period, to finally go into operation. Testing began in late 2007, but the technicians have not been able to solve the problem of platinum metal elements concentrating at the bottom of the furnace and blocking the passage of the mixed waste and glass into canisters.

There are some who argue that the problem is unfixable and that JNFL and relevant government agencies stubbornly and unwisely stick with Japanese technology developed on a small scale at the Tokai research station even though it is proving difficult to scale up. Japan would be better off scrapping the system entirely and buying a more proven system off the shelf from Europe, according to this school of thought.

A Permanent Solution?

Meanwhile, Japan is no closer to finding a permanent HLW waste repository within the four main islands. Like most countries with **nuclear** power plants, Japan proposes to bury its spent fuel deep underground. But while other countries seek out the most suitable geology and then try to persuade localities to accept a repository in their neighborhood, Japan has taken the opposite course.

The industry-funded **Nuclear** Waste Management Organization of Japan (NUMO) was formed in 2000. Its policy is to quietly solicit local officials to volunteer their localities as potential storage sites and then investigate to see if the geology is suitable for permanent storage. So far, though, only one town has stepped forward -- and then only briefly.

In 2007 the town of Toyo, in Kochi prefecture on Shikoku Island in western Japan, submitted a petition to begin exploratory drilling, which NUMO was pleased to accept and the Ministry of Economy, Trade and Industry (METI) in Tokyo trumpeted as evidence of progress in solving the **nuclear** waste issue. But the excitement was short-lived.

In the face of opposition from members of the town council, not to mention the prefectural government, the mayor of Toyo resigned to force an election on the issue. He was soundly defeated, and the new mayor quickly withdrew the application. So far, no other towns have come forth to volunteer as a host HLW site, even though it could mean a billion-yen windfall just for site surveys.

Other Options

Japan's electric power utilities are also pressing localities to host interim spent fuel storage facilities, but with only a mixed degree of success. For example, Tokyo Electric Power Co. (Tepco), which operates seven boiling water reactors at Kashiwazaki and six at **Fukushima** in northern Japan, is planning to build a 5,000 metric ton interim spent fuel storage pool at Mutsu City in Aomori prefecture.

By all accounts Mutsu is eager to host the planned facility, although prefectural officials are more skeptical, worried that what is billed as "interim" will turn into "permanent." Aomori prefecture already boasts considerable **nuclear** power infrastructure, including, of course, the Rokkasho reprocessing plant. The Mutsu storage facility is still undergoing safety assessments.

Although Mutsu is the only Japanese city so far to endorse an interim storage pool, several other smaller cities have expressed interest in hosting such facilities as a means of helping boost stagnating economies. So far none has passed beyond the interest stage, however.

Just before the new Japanese government took office in September, the influential national newspaper the Yomiuri Shimbun took note of the lack of progress, saying in an editorial that the country's **nuclear** fuel cycle policy must be reviewed with fresh eyes. "The new administration that will be led by Yukio Hatoyama of the Democratic Party of Japan should take the situation into

account and drastically review current policy and put together its own agenda."

In its election manifesto, the DPJ said there should be a strong central government role in back-end fuel cycle matters. "Reprocessing of spent **nuclear** fuel and disposal of radioactive waste from **nuclear** power plants are long-term projects so the government should take final responsibility for establishing the technology and for the project." Although it is still early days, so far the DPJ has not formulated an agenda on this or other matters relating to **nuclear** power.

16 février 2010 : la préfecture de Fukushima est disposée à accepter l'utilisation du plutonium

Fukushima Pref. ready to accept 'pluthermal' power generation

Kyodo

Kyodo News

KYODO

FUKUSHIMA, Japan, Feb. 16 -- **Fukushima** Gov. Yuhei Sato said Tuesday he is willing to accept a "pluthermal" power-generation project by Tokyo Electric Power Co. at a power plant in the prefecture if certain conditions are met.

Speaking at a prefectural assembly session, Sato said the international trend is for **nuclear** power and that there have been improvements in safety measures by the government, along with Tokyo Electric which was forced to delay its plan after a coverup of **nuclear** reactor faults came to light in 2002.

But for the plan to go ahead, Sato said the No. 3 reactor at the **Fukushima** No. 1 **nuclear** power plant should be protected against both earthquakes and aging, while adding that the safety of plutonium-uranium mixed oxide fuel, which has been stored at the plant since 1999, should be confirmed.

Tokyo Electric is expected to start loading MOX fuel as early as June when it conducts a regular check up at the plant, and could begin pluthermal power generation in September. Pluthermal is a term used in Japan combining "plutonium" and "thermal" to mean the burning of MOX fuel.

Pluthermal power generation is seen as a pillar of Japan's **nuclear** fuel recycling initiative. But Tokyo Electric's plan hit a snag after former **Fukushima** Gov. Eisaku Sato withdrew his approval due to the coverup scandal.

In November, Kyushu Electric Power Co. began Japan's first pluthermal power generation at its Genkai **nuclear** power plant in Saga Prefecture. Shikoku Electric Power Co. is scheduled to begin pluthermal power generation in March, while Chubu Electric Power Co. plans to start it by the end of fiscal 2010.

==Kyodo

28 février 2010 : les centrales japonaises n'ont pas souffert du tsunami

UPDATE 1-Japan nuke plants, refineries unhurt by tsunami

Reuters News

* Some oil shipments disrupted, but refineries running

* **Nuclear** plants continue operating as usual (Adds details)

By Osamu Tsukimori

TOKYO, Feb 28 (Reuters) - Japanese power companies operated their plants and refiners processed oil as usual on Sunday, despite tsunami waves washing in on the country's northeast Pacific coast in the wake of a massive earthquake in Chile.

Some oil product shipments were disrupted, but the waves caused no other damage to the plants, officials said.

Tsunami waves of up to 1.5 metres (5 ft) hit far-flung Pacific regions from the Russian far east and Japan to New Zealand's Chatham Islands on Sunday after the quake struck Chile, killing more than 300 people. [ID:nTOE61R014]

The Japan Meteorological Agency had warned that waves of more than 3 metres (10 ft) could batter the northeast Pacific coast. As of Sunday evening, waves of up to 1.2 metres (4 ft) had hit the coast in Iwate.

The trade ministry said there had been no impact on **nuclear** operations as of 0800 GMT, including at Tokyo Electric Power's **Fukushima** plants, Japan Atomic Power's Tokai Daini plant, Chubu Electric's Hamaoka plant and Kyushu Electric's Sendai plant, all in the region.

Nippon Oil Corp said its 145,000 barrels per day Sendai refinery and 180,000 bpd Muroran refinery have been operating as usual, while Idemitsu Kosan Co officials said there was no impact on its 140,000 bpd Hokkaido plant.

Marine oil product shipments from the three refineries, however, were suspended earlier in the day due to the tsunami warnings, the officials added.

The utility and refiner officials said they had taken precautionary measures well before the first waves hit and that they did not expect major disruptions to their business. (Reporting by Osamu Tsukimori and Yoko Kubota)

3 mars 2010 : arrêt du réacteur n°6 en raison d'une canalisation défectueuse

Japan's Tepco to idle No.6 Fukushima1 reactor by Fri on glitch

Platts Commodity News

PLATT

Tokyo (Platts)--3Mar2010/447 am EST/947 GMT

Tokyo Electric Power Company said Wednesday that it plans to shut the 1.10 GW No.6 reactor by Friday at its **Fukushima**-1 **nuclear** power plant in northeastern Japan after finding a glitch.

Tepco's decision comes after it has detected irregularity in a pipe inside of its turbine building, the company said.

The utility plans to start shutting down the reactor at around 10 am (01:00 GMT) local time Thursday to shut the reactor at around midnight on Friday, the company said.

Tepco has not said how long its inspection would last.

News of **nuclear** power plant outages and restarts in Japan are closely watched as they can lead to a rise or fall in demand for feedstocks such as fuel oil, crude and LNG for power generation.

Takeo Kumagai, takeo_kumagai@platts.com

2 juin 2010 : arrêt du réacteur n°1 à la suite d'une panne du circuit de refroidissement

UPDATE 1-TEPCO to shut Fukushima-Daini reactor for inspection

Reuters News

LBA

TOKYO, June 2 (Reuters) - Japan's Tokyo Electric Power Co (TEPCO) said on Wednesday it has begun shutting down the 1,100 megawatt No.1 reactor at its **Fukushima**-Daini **nuclear** plant for an unplanned inspection after finding a problem with the unit's cooling system.

A timetable for the restart of the unit has not been set and will depend on the results of the inspection, a company spokesman said on Wednesday. (Reporting by James Topham)

13 juin 2010 : le tremblement de terre n'a pas affecté la centrale

Japan Tepco maintains Fukushima nuclear operations despite quake

Platts Commodity News

PLATT

Tokyo (Platts)--13Jun2010/1254 am EDT/454 GMT

Japan's Tokyo Electric Power Company has maintained normal **nuclear** operations at its **Fukushima nuclear** power plant in northeastern Japan in spite of a significant earthquake that hit the region early Sunday afternoon, a company spokesman said.

A magnitude 6.2 earthquake hit northern Japan at 1233 local time (0333 GMT) Sunday off the coast of **Fukushima** prefecture at a depth of 40 km, according to the Japan Meteorological Agency.

Tepco has a total of nine reactors in operation with a combined capacity of 8.89 GW. They account for 51.4% of Tepco's total capacity of 17.31 GW at 17 **nuclear** power plants across Japan.

Meanwhile, Tohoku Electric has also maintained normal operations at its Onagawa **nuclear** power plant in northeastern Japan in spite of the large earthquake, a company spokesman said.

Tohoku Electric has three **nuclear** plants in operation with a combined capacity of 2.79 GW, or 85.2% of its total **nuclear** capacity of 3.274 GW across four units in north and northeastern Japan.

News of **nuclear** power plant outages and restarts are watched closely as they can lead to a change in demand for feedstocks such as fuel oil, crude and LNG for power generation.

Takeo Kumagai, takeo_kumagai@platts.com

Jonty Rushforth, jonty_rushforth@platts.com

17 juin 2010 : arrêt du réacteur n°2 à la suite d'une "anomalie"

Emergency system nearly activated at Fukushima nuke reactor

Kyodo

Kyodo News

KYODO

FUKUSHIMA, Japan, June 17 -- A reactor at a **nuclear** power plant in **Fukushima** Prefecture automatically shut down Thursday after detecting abnormality and nearly activated the emergency core cooling system, the last line of keeping **nuclear** safety, its operator Tokyo electric Power Co. said.

While there was no radiation leak in the incident that occurred at the No. 2 reactor of the **Fukushima** No. 1 **nuclear** plant around 3 p.m., the water level of the reactor fell nearly 2 meters below the normal level as the water supply pump also came to a halt.

The water level was just 40 centimeters above the level in which the emergency system is set to kick in, when a substitute pump started up to refill the water, according to Tokyo Electric Power Co.

When the reactor is automatically shut down, its internal power source is designed to stop and an external power source will instead be activated. But this transition was not made in the latest incident somehow, the nation's largest utility said.

A defect in equipment around the power generator is suspected to have triggered the shutdown, the company said, adding it is investigating what exactly caused the problem.

The **Nuclear** and Industrial Safety Agency said such a power switch problem is assumed in the reactor's safety plan, and while it is necessary to find the cause of the incident, there was no problem in the way Tokyo Electric Power dealt with it by activating another pump.

==Kyodo

9 août 2010 : introduction d'un recours judiciaire pour interdire l'usage du plutonium

Suit filed to stop use of MOX fuel.

Japan Energy Scan

JPES

0

SAGA, Japan, Aug. 9 Kyodo

A group of 130 people filed a lawsuit Monday, demanding a halt to "pluthermal" operations at Kyushu Electric Power Co.'s Genkai **nuclear** plant in Saga Prefecture.

The suit, filed with the Saga District Court, is the first in Japan to seek the suspension of the use of plutonium-uranium mixed oxide, or MOX, fuel.

The plaintiffs, led by Matsumi Ishimaru, 59, argued in their complaint that its use could lead to a major accident, jeopardizing local residents' rights and the environment. "Pluthermal would harm generations of our descendants so we just have to say 'no' to it," Ishimaru said.

Other than Genkai plant, Shikoku Electric Power Co.'s Ikata power plant in Ehime Prefecture is also involved in pluthermal operations, while Tokyo Electric Power Co. is due to commence using MOX fuel in September in **Fukushima** Prefecture.

MOX fuel is a mixture of uranium and plutonium reprocessed from spent uranium. Pluthermal is a Japanese word that combines "plutonium" and "thermal."

18 août 2010 : le réacteur n°1 doit être arrêté à la suite de la découverte d'une fuite radioactive

RIM CRUDE NO.3856 Market News --TEPCO plans to shut down No1 reactor at Fukushima No1 nuclear power plant

Rim Crude Intelligence Daily

RIMCRD**NGC** Rim Intelligence (English)**GC** CTGRME

Tokyo Electric Power Co. (TEPCO) plans to halt operations of the 460-MW No. 1 reactor at its **Fukushima** Daiichi (No. 1) **nuclear** power station as water containing radioactive material has been leaked in the turbine facility, it was announced Friday. It is still unknown how long TEPCO will shut down the reactor. A company spokesman said the leak does not immediately affect the operations of the plant.

Japan's Tepco to idle 460 MW Fukushima1 reactor on glitch Saturday

20 août 2010

Platts Commodity News

PLATT

Tokyo (Platts)--20Aug2010/159 am EDT/559 GMT

Japan's Tokyo Electric Power Company will idle Saturday the 460 MW No. 1 reactor at its **Fukushima**-1 power plant in northeastern Japan after finding a glitch, the company said Friday.

Tepco did not say how long its unplanned maintenance of the 460 MW reactor would last. The unit was on a conditional run since it was restarted on July 21 after a scheduled turnaround.

After idling the No. 1 reactor, Tepco will have nine reactors in operation with a combined capacity of 9.46 GW. They account for 54.7% of Tepco's total capacity of 17.31 GW at 17 **nuclear** power plants across Japan.

Japan is in the midst of the country's peak summer demand season, which typically spans July-September.

High temperatures have a direct impact on air-conditioning demand from industrial, commercial and household users. The weather also has an impact on crude, fuel oil and LNG used for thermal power generation.

News of **nuclear** power plant outages and restarts is closely watched as it can lead to change in demand for feedstock such as fuel oil, crude and LNG for power generation.

Takeo Kumagai, takeo_kumagai@platts.com

23 août 2010 : l'énergie nucléaire est une opportunité pour le Japon

Nuclear power offers Japan opportunity to grow economy, contribute to world

Nikkei Weekly

JEJ

Panelists who exchanged views on Japan's **nuclear** power technology were: Yoichi Kaya, professor emeritus of the University of Tokyo; Ichiro Takekuro, then-executive vice president (now fellow) of Tokyo Electric Power Co. (Tepco); Yasuharu Igarashi, executive officer, corporate senior vice president, president and CEO of Power Systems Company, Toshiba Corp.; and Hidehiro Yokoo, director-general, electricity and gas industry department, Agency for Natural Resources and Energy in the Ministry of Economy, Trade and Industry. Tadashi Maeda, head of the corporate planning department, Japan Bank for International Cooperation, moderated.

Maeda: **Nuclear** power generation is getting another look around the world, and plans for **nuclear** power plant construction are advancing not just in countries that have introduced **nuclear** power in the past but also in emerging nations. Behind this "**nuclear** power renaissance" lies the problem of climate change and the issue of ensuring safe energy.

Japan, which has advanced technology in the field of **nuclear** power, could make enormous international contributions by supplying that technology. In addition, this is a wonderful opportunity for economic growth in Japan. A consortium of Japanese and U.S. companies and a coalition of French companies were the leading candidates to win the bidding to build a **nuclear** plant in the United Arab Emirates. However, last December the contract went to a consortium of South Korean firms. Let's begin our discussion on this point.

Takekuro: The analysis is that there were three major factors that led to South Korea winning the order. The first is that President Lee Myung-bak stood out front and led the nation in putting its all into winning the order. The second is that Korea Electric Power Corp. became a centralized response institution, submitting proposals and undertaking contracts. The third is that the South Korean bid was significantly cheaper than those of the French or U.S.-Japan groups.

Igarashi: We should also make the point that South Korea met the UAE's needs. South Korea won an order not just to build the **nuclear** power plant but to handle operation and maintenance as well. Moreover, it provided a 60-year guarantee. It is very difficult for a private-sector company to offer guarantees over a 60-year period. We are at a point where it would be nice in Japan for the country to come together to tackle such problems.

Maeda: I have also heard that President Lee was not just the leading diplomat but also gave instructions regarding costs. On the other hand, Japan did not really emphasize the cost aspect, thinking that Abu Dhabi had abundant cash. Its awareness of the situation was overly optimistic.

Yokoo: The government also recognizes the importance of high-level diplomacy. However, for effective high-level diplomacy, straightforward negotiations and concrete proposals are vital. In addition, what the UAE was looking for was to outsource the entire system - from construction to operation of the **nuclear** power plant. However, a structure that could meet those needs in a unified fashion has not been prepared in Japan. Taking a lesson from this, a new company has been established by the government and private sector in a bid to win a **nuclear** power plant order in Vietnam.

Maeda: It has been mentioned that South Korea guaranteed operation, maintenance and management of the plant for 60 years, but this is a field in which Japan is strong. Japan also has practical experience of operating **nuclear** reactors safely over many years. It would seem that being

insufficiently appealing on that front is one of the regrets. Some insiders cited the low operating rates of Japan's **nuclear** power plants as a reason the order was not awarded to the U.S.-Japan consortium.

Kaya: Certainly, the operating rate has been low at Japan's **nuclear** power plants since 2000 and fell to 60% last year. This was caused in part by stoppages resulting from the Chuetsu earthquake in Niigata Prefecture. The real operating rate from 1995 through 2000 was in excess of 80%. When one considers that maintenance inspections are conducted every 13 months, this is a very high number and speaks to how advanced Japan's technology is.

Takekuro: It is a fact that a variety of problems played into the low operating rate, and as one player in the industry, we take that very seriously. As a company entrusted with **nuclear** power plants, we know that safety is more important than anything else, and to that end we strive for safe operation. The lower operating rate since 2007 is the result of the Kashiwazaki-Kariwa **nuclear** power plant being shut down due to the Chuetsu earthquake. This is understandable when you realize that the operating rate is 80-84% if you look just at the 10 **nuclear** reactors in **Fukushima** Prefecture.

In the future, we want to steadily raise operating rates by implementing improvements and advances in inspection and maintenance programs and improving diagnostic technology.

In addition, through last year's system revisions, the time between **nuclear** plant inspections will go from a standard 13 months to being based on the characteristics of the individual plants and their equipment. In the midst of that, we hope to improve operating rates while maintaining equipment safety. We aim to be at the top level in the world in around five years.

Yokoo: In the past, Japan's operating rate has reached 84%, and I think the goal set under the government's **nuclear** power promotion plan of 85% in 2020 is appropriate. Aiming for 90% in 2030 is ambitious, but it is an attainable figure if **nuclear** power plants operate for 18 months on average and are shut down for two months for regular inspections.

Maeda: If you increase operating rates, this will not only be a major factor in boosting **nuclear** power plant exports but will also help reduce carbon dioxide emissions and use of fossil fuels. We hope to achieve these goals soon.

However, going back to the issue of stopping the Kashiwazaki-Kariwa **nuclear** power plant because of the earthquake, viewed another way this is a testament that Japan's **nuclear** power plants are earthquake resistant and extremely safe. There are many earthquake-prone countries in the world. Perhaps this could become an appealing point for them.

Igarashi: When the Chuetsu earthquake struck, safety functions including "stop," "cool" and "close" worked properly. Toshiba is involved in the construction of state-of-the-art **nuclear** reactors known as advanced boiling water reactors at the Kashiwazaki-Kariwa **nuclear** power plant's No. 6 and No. 7 units, and when it participated in the U.S. South Texas Project, customers visited and toured Kashiwazaki-Kariwa. I think the understanding that this engendered led to contracts being signed.

Maeda: Tepco, Toshiba and the Japan Bank for International Cooperation last year invested in Canada's Uranium One Inc., which produces and sells uranium. What do you think about strengthening front-end operations such as fuel procurement?

Takekuro: Japan has an extremely superior equipment supply chain and has also created comprehensive construction systems. In addition, a safety culture, or safety regulations, cultivated over more than 40 years of operation along with operations personnel who can accurately respond to a variety of situations have been nurtured. And this is one of Japan's major strengths.

This know-how is put to use in exporting plant systems to new countries and in supporting operations. Accordingly, in order to utilize this strength to the utmost, with the nation's cooperation, it is vital that systems be created so that uranium, which is indispensable for operation, can be stably supplied by Japanese businesses involved in uranium development both at home and abroad.

Kaya: In order for consortiums of Japanese companies to win **nuclear** power plant orders in countries just introducing this technology, a structure is needed that can take on the entire system. It is important to leave the impression that Japan is comprehensively strong in technology, from the front end to the back end. In fact, small and midsize companies in Japan that make peripheral equipment have been well-received worldwide, to say nothing of our heavy equipment manufacturers and plant makers.

Unfortunately, it is difficult to say that we have perfectly grasped the front end and the back end. In particular the back end, such as reprocessing of spent **nuclear** fuel, has been difficult to realize.

Emerging nations look at the operating status of **nuclear** power plants in Japan as showcases. Japan needs to establish this technology as soon as possible.

Maeda: In order to systematically export power plants, supplying enriched uranium as a fuel and reprocessing fuel will likely be necessary. Regardless, in the case of the **nuclear** power field, a bird's-eye view must be taken of the value chain as a whole, including not just the plant itself but also such things as **nuclear** nonproliferation structures.

However, for the UAE order, there is the view that South Korea also supplied things not related to power generation, such as interchange on military technology. Would such a development as adding these "extras" be possible in Japan?

Yokoo: In the case of countries just introducing **nuclear** power, even if a power plant is built there is no system for training technicians to operate it. Nor is there a legal or regulatory framework in place. I think it is possible to support the building of such programs. Besides this, there could probably be the approach of supplying the power grid infrastructure surrounding the **nuclear** power plant as a package deal with it.

Maeda: The idea would be to provide not just the power plant but to ascertain the needs of other countries in the electric power field as a whole and propose a packaged, all-Japan solution. With Japanese technology, that should be possible.

(The Nikkei Weekly 08/23/2010 Edition)

14 septembre 2010 : le réacteur n°3 va être redémarré et utilisera du MOX pour le première fois

TEPCO to restart reactor using MOX fuel for first time

Reuters News

LBA

TOKYO, Sept 14 (Reuters) - Tokyo Electric Power Co (TEPCO) said it was preparing to restart the 784 megawatt No.3 reactor at its **Fukushima**-Daiichi **nuclear** plant on Friday, at which it is set to burn so-called mixed-oxide (MOX) fuel for the first time.

Asia's biggest utility said if all goes as planned, the reactor will start generating power on Sept. 22 and begin commercial operations on Oct. 26.

It had shut the reactor at the northern Japan plant for planned maintenance on June 19.

During the shutdown, TEPCO prepared for uranium dioxide as well as MOX fuel to be burned at the reactor, making it the first time the company will use the recycled fuel.

Other power companies have started using the recycled fuel as part of Japan's goal to move towards a closed cycle where it recycles its own spent fuel and then burns recovered uranium and plutonium as MOX fuel. (Reporting by Risa Maeda; Editing by Chris Gallagher)

SE Asia/Pacific Rim

16 septembre 2010 : TEPCO souhaite augmenter la part du nucléaire et des énergies renouvelables

Japan's TEPCO wants to increase share of nuclear and renewable energy BY ANURADHA SUBRAMANYAN

Global Power Report

COG

ISSN: 1095-6441

Tokyo Electric Power Co. wants **nuclear** and renewable energy plants to contribute 50% of its projected domestic generation by 2020.

In a September 13 news release, the company said it plans to invest $30 billion to achieve this target.

TEPCO said **nuclear** power would comprise the bulk of the targeted capacity but did not mention the exact capacities. It also did not mention how much total power it planned to generate by 2020. It only mentioned that it planned to generate 400 MW of renewable energy by 2020 by developing wind, solar, biomass and hydropower plants.

TEPCO currently owns power plants totaling 64 GW, of which gas-fired plants represent 26 GW, oil and coal-fired plants 12 GW, **nuclear** plants 17 GW, and hydropower plants 9 GW. It has no renewable energy capacity.

TEPCO also said it plans to expand its overseas electricity business to compensate for the low domestic demand. The company plans to spend $9.6 billion to develop power plants totaling 10,000 MW outside Japan by 2020.

"**Nuclear** power generation is central to producing zero-emission power supply. We will make steady efforts to develop and utilize renewable energy sources while also promoting high efficiency, low carbon thermal power generation," the company said.

TEPCO said it plans to develop new **nuclear** units at its existing **Fukushima** Daiichi and Higashidori power stations. However, the company did not provide details on the size of the units.

The company's seven-unit 8.21-GW Kashiwazaki-Kariwa **nuclear** power plant was shut down in 2007 following an earthquake and only a couple of units were re-opened in 2009.

In the renewable energy sector, the company said, "We will boost renewable energy use in the Hokkaido and Tohoku regions by developing wind power projects." The company also said it plans to invest in the research and development of offshore wind power projects.

In the thermal power sector, the company plans to develop higher efficiency and lower carbon emission plants. TEPCO said the development of such plants was crucial because, "thermal power generation, with its capability to respond to fluctuations in electricity demand, is an important source of power that could provide stable supplies of electricity even in a low-carbon era."

TEPCO said the new **nuclear** and renewable energy projects would reduce its CO2 emissions by 25% in 2020 compared with 1990 levels.

On its overseas ventures, TEPCO said it plans to open an office in Beijing to expand its power business in China. At present TEPCO's overseas power developments are limited to Australia, Indonesia and the Philippines. —

18 septembre 2010 : démarrage de l'exploitation du MOX

2ND LD: MOX fuel power generation commences at Fukushima nuclear plant

Kyodo

Kyodo News

KYODO

FUKUSHIMA, Japan, Sept. 18 -- Tokyo Electric Power Co. started its first power generation operation using plutonium-uranium mixed oxide fuel at its **Fukushima** No. 1 **nuclear** power plant in northeastern Japan on Saturday morning, the utility company said.

The No. 3 reactor at the power plant in the town of Okuma, **Fukushima** Prefecture, achieved a self-sustaining **nuclear** chain reaction in the early afternoon and actual power generation is expected to begin in several days, according to the company.

Tokyo Electric delayed the start of the operation, initially scheduled for late Friday, after the reactor's alarm light indicating the condition of the pipe valve for the emergency core cooling system did not function properly Friday night.

There were no problems with the pipe or valve and the circuit connecting the lamp was fixed, according to the company.

The reactor is the third in Japan for MOX fuel power generation, with the others located at Kyushu Electric Power Co.'s Genkai plant in Saga Prefecture and Shikoku Electric Power Co.'s Ikata plant in Ehime Prefecture.

It is the only one of the three to have undergone anti-aging treatment, more than 30 years after its launch, and also the only boiling water reactor to undertake such operations.

Masao Yoshida, head of the **Fukushima** plant, apologized for the delay in the start of operations, saying, "It was a betrayal of local residents who gave us permission to carry out pluthermal" power generation.

Pluthermal, a Japanese word that combines "plutonium" and "thermal," involves the use of MOX fuel, a mixture of uranium and plutonium reprocessed from spent uranium, to produce electricity.

Tokyo Electric plans to gradually increase the power output of the reactor and start commercial operations after completing a final state inspection scheduled for Oct. 26.

The utility company had initially intended to commence pluthermal operations in 2000, but the plan was suspended in the wake of the mismanagement of MOX fuel data by some power companies.

After other delays, **Fukushima** Gov. Yuhei Sato finally approved pluthermal power generation at the plant in August.

==Kyodo

25 octobre 2010 : Areva estime que l'utilisation de MOX ne présente pas de danger pour les populations

Areva Japan: Focusing on MHI and Other New Opportunities

Uranium Intelligence Weekly

URIW

For 40 years or more Areva's operations in Japan (and those of its predecessors) have centered on promoting reprocessing, with many well-documented disappointments along the way and, only recently, some success in getting a mixed-oxide (MOX) fuel program launched. Now, however, the French company's focus is expanding to include partnerships aimed at supporting Areva's reactor vendor business.

The state-owned concern formed in 2001 with the merger of French **nuclear** fuel company Cogema and reactor manufacturer Framatome has partnered with Mitsubishi Heavy Industries (MHI) and moved to more closely cooperate with other Japanese **nuclear** equipment suppliers such as Japan Steel Works (JSW). Recently, UIW sat down with Areva Japan President Remy Autebert and Managing Director Erwan Hinault to discuss his company’s current projects, plans and frustrations.

Long-Term Partnerships

[…]

While Rokkasho disappointed, Japanese reactor operators continued sending spent fuel to France for reprocessing, a practice that began back in the 1970s. Now with plenty of plutonium sitting at Areva's La Hague plant, some of it is being turned into MOX fuel for shipment back to Japan. Happily for Areva, that program appears to be running smoothly after a few hiccups (UIW Oct.19'09,p4). Currently, three Japanese utilities are using MOX: Kyushu Electric Power Co., the Shikoku Electric Power Co. and, most recently, Tokyo Electric Power Co. (at one of its **Fukushima** reactors). “Local people are being very cautious, but we believe that MOX provides no extra risk and that one-by-one other utilities will follow,” said Autebert.

[…]

5 novembre 2010 : arrêt d'urgence du réacteur n°5 en raison de "problèmes"

TEPCO Urgently Stops Unit 5 At Fukushima No.1 Nuclear Power Plant; Likely to revise up its contract volume of fuel & crude oils if shutdown is prolonged

Tex Energy Report

TEXERE

Tokyo Electric Power Company, or TEPCO, urgently halted a **nuclear** reactor because troubles occurred at unit 5, of which rating output is 784,000 KW, of **Fukushima** No.1 **Nuclear** Power Plant in Okuma Town, **Fukushima** Prefecture. Neither the cause of the troubles has been yet known nor the schedule to resume operations also has still been fixed.

At unit 6, having rating output of 1.1 million KW, of the **Fukushima** No.1 **Nuclear** Plant, failures were also found. The unit had been shut down for periodical maintenance since August 14th.

Therefore, TEPCO has been unable to develop its forecast of operations even now, although completion of the turnaround was slated for October 13th.

TEPCO has so far suspended operations of its **nuclear** power plants due to troubles beyond its assumption other than planned regular inspections. However, excepting the unusual fact pattern when all its 7 units of Kashiwazaki Kariwa **Nuclear** Power Plant were stopped after directly being hit by the earthquake, which broke out in the offshore of central part of Niigata, the case, where two units were halted simultaneously, is extremely rare. A start-up test for Unit 5, with rating output of 1.1 million KW, of which restoration work was already finished, is several months behind schedule because procedures for its approval is not going smoothly.

13 décembre 2010 : projets et difficultés de TEPCO

Tepco Back in the Black

Uranium Intelligence Weekly

URIW

Three-and-a-half years after an earthquake knocked out the world's largest **nuclear** power plant, the Tokyo Electric Power Co. (Tepco) is back in the black -- but with power demand falling in Japan, it has become increasingly dependent on overseas projects to offset declining earnings at home.

In just a few minutes after the Chuetsu-Oki earthquake struck on Jul. 16, 2007, Tepco lost output from seven reactors, representing more than 8 gigawatts of marketable electricity. The extended outage at the Kashiwazaki-Kariwa complex on the coast of the Sea of Japan forced the utility to scramble for replacement power and move up thermal projects -- and the result was two years of red

ink.

Tepco is not only Japan's largest utility, serving the capital and its surrounding metropolis, but is also one of the world's largest private **nuclear** power plant operators. It has 17 reactors divided between the Kashiwazaki site and **Fukushima** in the northern half of Honshu.

A successful stock offering this past summer netted 450 billion yen ($5.45 billion), most of which will be set aside for construction of the first unit of the planned (albeit delayed) new Higashidori **nuclear** plant as well as additional thermal power plants and other projects.

Tepco's president, Masataka Shimizu, in early fall announced that his company plans to spend as much as one trillion yen over the next 10 years to expand into overseas markets. The plans call for helping to develop **nuclear** power plants in the United States (where it has a stake in the South Texas Project), and Vietnam. The utility also intends to invest in thermal projects and some other "new energy" sources in other developing countries.

Milestone at KK

A major milestone in the utility's recovery took place Nov. 18 when technicians began bringing KK's Unit-5 back to full power; it will be the fourth of the seven KK reactors to resume commercial operation, along with Units 1, 6 and 7. Though the power and revenue is certainly welcome, the success may be as much psychological as it is material. For the first time since the earthquake, a majority of the units are now in operation instead of the other way around (UIW Jul.12,p7).

Indeed, Tepco is rapidly closing in on something close to normal operations at the site considering routine shutdowns for refueling and maintenance often take plants offline. "It was rare [before the earthquake] for us to have all seven units operating at the same time," says Hiro Hasegawa, manager of corporate communications. In fact, Unit 6, the second of the plants to be brought back, is currently out of commission for these routine operations.

Events have confirmed the wisdom of initially concentrating on restoring Units 6 and 7 since their return to commercial operation helped put Tepco back in the black. Net income for fiscal year 2009 was a positive 133.7 billion yen compared with an 84.5 billion yen loss the previous year. Through fiscal 2009, the outage cost in total 285 yen billion for increased fuel and electrical energy expenditures less 35 billion yen in **nuclear**-fuel cost savings and other back-end expenses, according to the latest financial statement.

The continuing outages at Kashiwazaki contributed to Tepco's 53.3% **nuclear** power plant capacity factor for fiscal 2009, which helped depress the overall national capacity of 65.7%. (In addition to Tepco, the Chubu Power Co's Hamaoka 5 unit is still down a year and a half after the Shizuoka Bay Earthquake, as geologists puzzle over the high movement it recorded compared with nearby units).

Japan's anemic capacity factor in recent years weighs heavily on Japan's **nuclear** industry. It lags well behind that of other nations, including South Korea, which regularly boasts plant capacity factors of 90% or higher. (Tepco's best year in 1999 was 84%; it was running at 74% just prior to the quake).

There has been much talk in the industry about steps to improve working efficiency, such as stretching out the normal 13-month period between safety inspections. The government now allows utilities to take longer periods between inspections, but many are reluctant to move aggressively on this while the public continues to harbor safety concerns stemming from earthquakes and the beginning of the long-delayed mixed-oxide fuel program.

Tepco is fully committed to the so-called "pluthermal" program and for closing the **nuclear** fuel cycle. One of its **Fukushima** boiling-water reactors this summer became the third in Japan to load MOX fuel. In September, Tepco announced that it would invest 130.4 billion yen in Japan **Nuclear** Fuel Ltd. to help maintain the troubled Rokkasho reprocessing plant and other fuel-cycle projects.

The **nuclear** fuel company, which recently announced another two-year delay due to difficulties surrounding the last stage of the process, put out a call for a 400 billion yen capital increase for its projects. Tepco's investment boosts its stake in JNFL to 28.6 percent. The three power-plant constructors, Toshiba, Hitachi and Mitsubishi Heavy industries, are expected to kick in a billion yen each.

Four New Reactors?

Tepco has four new **nuclear** plants on the drawing boards, two at the **Fukushima** Daiichi site and two more at Higashidori in the northern Aomori prefecture. However, with starting dates being continually postponed, it is anybody's guess when work will begin on any of these. The official dates for **Fukushima** 7 and 8 are 2016 and 2017 respectively; for Higashidori 1, 2017, and for Unit 2 "2020 or later." However, Tepco tells UIW that the next plant to start, early next year, will be Higashidori 1, pending a final government sign-off.

The main reason for the postponements is persistent stagnation in electric power demand. "Ten to 20 years ago Japanese were hungry for power," says Hasegawa. "But our demand is falling, has been falling, and will continue to fall." So not surprisingly, Tepco is turning to foreign markets.

Its investment this year in the South Texas Project Units 3 and 4 was the first time a Japanese electric power utility, as opposed to a builder, had invested in an overseas **nuclear** power project (UIW May10,p3). The next obvious target is Vietnam, where Japan has a leg up on Units 3 and 4 at the Ninh Thuan site. For Tepco, success depends a lot on the design that is ultimately selected. Says the Tepco spokesman: "We're sure the ABWR is most suitable for Vietnam, but they may choose a PWR."

Beyond Vietnam, the utility is unsure of its next market, but it is clear on the need for more private-sector and governmental aid in securing **nuclear** plant orders in developing nations. Tepco has been active in this year's formation of "Team Japan," the alliance of government, constructors and operators more formally known as JINED, Japan International **Nuclear** Development Co., formally started in October (UIW Jun.7,p6). One of Tepco's vice presidents, Ichiro Takekuro, heads the new organization.

Todd Crowell, Tokyo

24 décembre 2010 : redémarrage du réacteur n°5, arrêté à la suite d'une panne sur une pompe

TEPCO Fukushima-Daiichi unit restarted after 7-wk halt

Reuters News

LBA

TOKYO, Dec 24 (Reuters) - Tokyo Electric Power Co (TEPCO) said it restarted the 784-megawatt No.5 reactor at its **Fukushima**-Daiichi **nuclear** plant at 6:00 p.m. (0900 GMT) on Dec. 22 after a seven-week shutdown.

The No.5 reactor automatically stopped on Nov. 2 as its water level became unusually high while adjusting control rods. [ID:nTOE6A107L]

TEPCO found that a problem in a pump caused the stoppage, made repair work and changed maintenance procedures, the company said in a statement. (Reporting by Risa Maeda; Editing by Chris Gallagher)

12 janvier 2011 : TEPCO décide d'allonger de trois mois le délai entre deux inspections du réacteur n°3, pour produire davantage

TEPCO seeks fewer reactor checks, higher run rate

Reuters News

LBA

TOKYO, Jan 12 (Reuters) - Tokyo Electric Power Co (TEPCO) , Japan's biggest utility, will extend the interval between inspections at one of its **nuclear** reactors to 16 months, making it three months longer than now, to help raise power generation from **nuclear** operations, it said on Wednesday.

Comparatively frequent shutdowns for inspections are seen as a reason for Japan's **nuclear** plant utilisation rate being lower than those of some other countries. The rate was 68.3 percent last year compared with 90 percent in the United States.

A higher run rate also leads to lower greenhouse emissions and helps to curb thermal fuel consumption.

The Tokyo-based utility said the 1,100-megawatt No.3 reactor at its **Fukushima**-Daini **nuclear** plant will start extended operations pending government approval and following the completion of its next inspection, scheduled to start around May.

A similar move was announced in October by Tohoku Electric Power . [ID:nTOE69E02Y]

TEPCO is likely to eventually apply the longer interval to other nulcear reactors, which generate about 30 percent of its total power output.

To support higher **nuclear** run rates, the government eased inspection rules in 2009 to let plants run continuously for up to two years instead of 13 months, in line with practices overseas.

Japan's 54 **nuclear** generators all currently undergo inspections within 13 months of the last check.

The government also aims to cut the duration of each checkup from nearly five months now. Checks of U.S. reactors take just over a month.

Japan's trade ministry drafted a plan in April to boost the average **nuclear** plant run rate to about 85 percent by 2020. (Reporting by Osamu Tsukimori)

Japan's Tepco to extend No.3 Fukushima2 nuclear unit outage cycle

12 janvier 2011

Platts Commodity News

PLATT

Singapore (Platts)--12Jan2011/614 am EST/1114 GMT

Japan's Tokyo Electric Power Company has decided to extend its scheduled maintenance cycle at its 1.1 GW No.3 **Fukushima**-2 **nuclear** reactor in northeastern Japan to "up to 16 months" from "up to 13 months," the company said Wednesday.

Following the decision, the company plans to submit its plan for approval to the Ministry of Economy, Trade and Industry in early February, it said.

The change would be one of the first applications of new **nuclear** regulations that came into force in January 2009. Tohoku was the first utility to make use of the rules when it decided to extend maintenance cycles at its 1.1 GW No.1 Higashidori **nuclear** reactor in northeastern Japan in October last year.

The new rules allow companies to operate **nuclear** facilities for 18 months without an inspection beyond the previous 13-month cycle. And after 2014, companies can apply for a 24-month inspection cycle.

When it announced the changes in 2009, METI said it would base its decisions on extensions, which could take up to six months, on reports from the utilities.

But in June 2010, the ministry said that at that time no companies had applied for extensions. That meant that all Japanese **nuclear** power plants were still running on 13-month inspection cycles.

A shift in **nuclear** inspection cycles could lower utilities' consumption of oil and LNG in Japan, as Japan's power companies typically boost thermal power generation -- when they lose **nuclear** power capacity -- by using feedstocks such as direct-burning crudes, low sulfur waxy residue, low sulfur fuel oil, high sulfur fuel oil and LNG.

Jonty Rushforth, jonty_rushforth@platts.com

Takeo Kumagai, takeo_kumagai@platts.com

SE Japan

Kyushu submits nuclear proposal BY Staff

20 janvier 2011

Power in Asia

PWRA

ISSN: 0965–9609, Issue 570

The Kyushu Electric Power Company has sought permission from the Ministry of Economy, Trade and Industry (Meti) to build a 1,590-megawatt **nuclear** power plant on Kyushu Island in western Japan. The company said on January 12 that it had already completed its environmental assessment, and the local government had given approval to the project's construction.

Kyushu Electric Power said that, if it gets Meti approval, it plans to start construction of the plant in March 2014. On that timetable, the project would then be scheduled to start commercial operation in December 2019.

Meanwhile in a separate **nuclear** development the Tokyo Electric Power Company (Tepco) is seeking to extend the scheduled maintenance cycle at its 1,100-MW No.3 reactor at the **Fukushima**-2 **nuclear** plant in northeastern Japan up to 16 months. The company had previously anticipated that the cycle would run for up to 13 months.

Following the company-level decision, which was announced on January 12, Tepco said that it would submit the plan to Meti for approval in early February.

If agreed, the change would be one of the first applications of revised **nuclear** regulations first introduced in January 2009. The pioneering change had seen Tohoku Electric Power decide in October 2010 to seek to extend the maintenance cycle at its 1,100-MW Higashidori No.1 reactor.

The new rules allow power generators to operate **nuclear** facilities for up to 18 months without an inspection, extending the previous 13-month cycle. After 2014, the companies can apply for a 24-month inspection cycle.

Staff

7 février 2011 : la NISA autorise TEPCO à utiliser le réacteur n°1 (40 ans) pendant 10 ans de plus

Tokyo Electric allowed to keep using Fukushima reactor for over 40 yrs

Kyodo

Kyodo News

KYODO

TOKYO, Feb. 7 -- The **Nuclear** and Industrial Safety Agency authorized Tokyo Electric Power Co. on Monday to use the No. 1 reactor at its **Fukushima** No. 1 plant in **Fukushima** Prefecture for another 10 years after it marks the 40th anniversary of its start of operation in March.

Tokyo Electric said it has yet to decide how much longer it will continue using the 460,000-kilowatt boiling light-water reactor, which began the operation on March 26, 1971.

It will be the third reactor older than 40 years in Japan after the No. 1 reactor at Japan Atomic Power Co.'s Tsuruga plant and the No. 1 reactor at Kansai Electric Power Co.'s Mihama plant, both in Fukui Prefecture.

The agency issued the authorization based on Tokyo Electric's maintenance plan for the coming 10 years and its own inspection of the reactor.

==Kyodo

7 mars 2011 : les projets de TEPCO pour augmenter la production nucléaire

Tokyo Electric: Long-Term LNG Deals Sufficient; More Nuclear Power

Dow Jones International News

DJI

TOKYO (Dow Jones)--Tokyo Electric Power Co. (9501.TO) will not have to increase the volume of liquefied natural gas committed under long-term contracts for several years, or even longer, as it plans to boost electricity generation from **nuclear** power to cut carbon dioxide emissions, a company executive said.

Many LNG projects are seeking committed buyers in an oversupplied market to justify the huge investment, and Japanese utilities are favored for their more-than-two-decade record of taking contracted deliveries regardless of market conditions. Tokyo Electric, also known as Tepco, is among the most desirable because it's Japan's largest LNG buyer, using roughly 20 million metric tons of LNG a year.

However, Tepco has already committed to purchases of more than enough LNG for its future use under long-term contracts, said Takao Arai, a managing director responsible for purchases of fossil fuels, without specifying a time frame.

"We have the target to produce more than 50% of our electricity from non-fossil fuel sources" by 2020, and to live up to the target, "we will have no choice but to hike our **nuclear** power operating rates," he said.

Arai said he's even a little concerned that the company won't need all the LNG cargoes it's committed to take once its **nuclear** operating rates rise.

The company currently produces roughly 30% of its total power output from **nuclear** fuel and another 30% from LNG.

Tepco has said it plans to build four new **nuclear** power reactors in northern Japan, with the 1.38-gigawatt **Fukushima** Daiichi No. 7 reactor slated to start commercial operations in October 2016, followed by the 1.385-GW Higashidori No. 1 and the 1.38-GW **Fukushima** Daiichi No. 8 in March and October 2017, respectively. The 1.385-GW Higashidori No. 2 is expected to commence commercial operations as early as 2020.

-By Mari Iwata, Dow Jones Newswires; 813-6269-2798; mari.iwata@dowjones.com [07-03-11 0331GMT]

9 mars 2011 : à suite du tremblement de terre, TEPCO "confirme" que la centrale de Fukushima n'a pas été endommagée

Strong quake hits Northeast Japan, tsunami warning issued

Agency Tunis Afrique Press

AGETAP

TOKYO, March. 9, 2011 (TAP) - A major 7.2-magnitude quake has hit Japan, swaying buildings in Tokyo and triggering a tsunami warning, but causing no reported casualties or damage.

The quake struck late on Wednesday morning, about 10km below the Pacific seafloor. The epicentre was about 160km offshore and 430km Northeast of Tokyo.

The Japan Meteorological Agency issued a tsunami warning for the East coast of the main Honshu island, where a 24-inch wave was first reported at Ofunato port half an hour after the quake.

Tokyo Electric and Tohoku Electric, **nuclear** power operators, confirmed that the quake did not damage their atomic plants and prefectures in Aomori, Miyagi and **Fukushima**."

Local residents in the rural seaside areas where the quake was felt most strongly reported no immediate damage from the quake.

11 mars 2011 : une "anomalie" signalée sur les réacteurs 1 et 2

Urgent: "Abnormality state" reported at Fukushima nuclear plant: Kyodo BY GaoLi

Xinhua News Agency

XNEWS

TOKYO, March 11 (Xinhua) -- Japan's Industry Ministry said the operator of the **Fukushima** No. 1 **nuclear** plant reported an abnormality Friday following an 8.8 powerful earthquake which hit a wide area in northeastern Japan including **Fukushima** Prefecture.

The system to cool reactor cores in case of emergency stopped at the No. 1 and No. 2 reactors of the plant operated by Tokyo Electric Power Co., Kyodo News quoted the ministry as saying.

11 mars 2011 : l'IAEA déclare que les réacteurs ont été arrêtés en toute sécurité lors du tremblement de terre

UPDATE 1-Nuclear plants near Japan quake safely shut--IAEA

Reuters News

LBA

(Adds quotes, detail)

VIENNA, March 11 (Reuters) - The four Japanese **nuclear** power plants closest to Friday's major earthquake in Japan have been safely shut down, the International Atomic Energy Agency said.

The IAEA, the Vienna-based U.N. **nuclear** watchdog, said it was seeking more information on which countries and **nuclear** facilities might be at risk from the tsunami unleashed by the quake.

"The four Japanese **nuclear** power plants closest to the quake have been safely shut down," the agency said in a statement, adding it was liaising with the Japanese Ministry of Economy, Trade and Industry on further details of the situation.

"The agency has sent an offer of good offices to Japan, should the country request support," the statement added.

Japanese media said the government had decided to declare a **nuclear** power emergency situation, which occurs if there is confirmation of radioactivity leaks from a **nuclear** power plant or a reactor cooling system breaks down.

Kyodo news agency said a fire broke out at Tohoku Electric Power Company's Onagawa **nuclear** plant in northeastern Japan following the earthquake.

Separately, **Fukushima** Prefecture, the site of a Tokyo Electric Power**nuclear** power plant, said on Friday the plant's reactor cooling system was functioning, denying an earlier report that it was malfunctioning.

(Reporting by Fredrik Dahl and Michael Shields; editing by Mark Heinrich)

11 mars 2011 : état d'urgence déclaré à Fukushima

Authorites declare emergency at nuclear plant after quake

The Irish Examiner

IRISEX

Japan has declared a state of emergency at a **nuclear** power plant when its cooling system failed after the massive earthquake struck.

There was no radiation leak.

Chief Cabinet Secretary Yukio Edano says the **nuclear** power plant in **Fukushima** developed a mechanical failure in the system needed to cool the reactor after it was shut down in the earthquake.

He said the measure was a precaution and there was no radiation leak at the **Fukushima** No 1 power plant. He said the facility was not in immediate danger.

The quake also started a fire in a turbine building at **nuclear** power plant in north-eastern Japan, but the reactor building was reported to be secure.

Tohoku Electric Power said smoke was observed coming out of the building, which is separate from the reactor, and the cause was under investigation. The plant is in Miyagi prefecture.

The company said there have been no reports of radioactive leaks or injuries.

SE actu-match

Le Japon en direct : Alerte au Tsunami

11 mars 2011

Parismatch.com

PARISM**LA** Français

Dernière minute

Au moins 44 morts. Le séisme et le tsunami qui ont dévasté vendredi la côte nord-est du Japon ont fait 44 morts et de nombreux disparus, rapporte la chaîne publique NHK. Aucun bilan officiel n'a toutefois été émis par les autorités.

[…]

Etat d'urgence **nucléaire**. Le gouvernement japonais a déclaré à titre de précaution une situation d'urgence **nucléaire** à la suite du puissant séisme qui a frappé l'archipel, a déclaré vendredi Yukio Edano, secrétaire général du gouvernement. Il a précisé que des tentatives étaient en cours pour tenter de recourir à une alimentation de secours après l'arrêt d'un système de refroidissement de la centrale **nucléaire Fukushima** Daiichi, gérée par Tokyo Electric Power et située dans la préfecture de **Fukushima**. Cette centrale a été arrêtée. A ce stade, aucune fuite radioactive n'a été décelée et le problème de refroidissement ne devrait pas entraîner de dégâts, a précisé Yukio Edano.

[…]

SE international

Japon: évacuation près d'une centrale nucléaire

11 mars 2011

Lejdd.fr

LEJD**LA** Français

Deux mille habitants des environs d'une centrale **nucléaire** ont été appelés à évacuer dans la préfecture de **Fukushima** (nord-est) quelques heures après le violent tremblement de terre qui a frappé la région, ont annoncé vendredi les autorités locales. Un séisme de magnitude 8,9, le plus fort jamais enregistré au Japon depuis 140 ans, a frappé vendredi le nord-est de l'archipel, déclenchant un tsunami de plusieurs mètres de haut sur les côtes Pacifique et faisant 40 morts et 39 disparus, selon un premier bilan de la police japonaise.