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From:	"Ed Siegel" <esiegel@tnl-online.com>
Created By:	esiegel@tnl-online.com

Recipients

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ALH1 (Allen Hiser)

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To: <whb@nrc.gov>, <alh1@nrc.gov>, <tlc@nrc.gov>
Date: 3/6/03 11:33PM
Subject: FYI: Questions? Comments? [corroborating references list and contact info suppressed, for now, pending reply & response]

A KNOWLEDGEABLE CORRECTION TO THIS NRC DOCUMENT (below) SHOW HOW IRRELEVANT and NAIVE and UNKNOWLEDGABLE THE NRC IN DENIAL REALLY IS!

AGAIN, IT'S LIKE A DAISY-CHAIN: ROOT-CAUSE ULTIMATE ORIGIN HIV, CAUSING RESULTING AIDS, CAUSING RESULTING "DEATH", a.k.a. GENERIC ENDEMIC CATASTROPHIC FAILURES!!!

THE ROOT-CAUSE ULTIMATE-ORIGIN IS:
WIGNER'S-DISEASE/OVERAGEING-EMBRITTLEMENT/OSTWALD-RIPENING/SPINODAL-DECOMPOSITION/"SENSITIZATION"
(DECIDEDLY NOT SITTING AROUND A CAMPFIRE TOASTING MARSHMALLOWS, HUGGING TREES AND SINGING "KUMBAYA"), BUT GENERIC ENDEMIC MULTI-DECADE LONG-TIME NUCLEAR-INDUSTRY((SO M I S CALLED "SUPER"-ALLOY SUPPLIERS: INCO, HAYNES, CABOT, ELGIN, ...); COMPONENTS FABRICATORS, ARCHITECT/ENGINEERS, UTILITIES/LICENSEES, NRC,DOE (AEC, ERDA,...), EPRI, INPO, NATIONAL LABORATORIES (BNL, ORNL, ANL, LANL, LLNL) F R A U D!!!

Critique inserted into text IN [RED HIGHLIGHTED BOLD ITALICS IN CAPITALS]

Dr. Edward Siegel
Metallurgist/Physicist/Whistleblower
Fired, Westin"KL"ouse Atomic Power Div./Nuc"EL"ar Energy Systems, Senior Metallurgist/Materials Scientist (1974)
Fired, P. S. E. & G. (N. J. utility), Manager/Metallurgy and Non-Destructive Testing (NDT/E) (1976)
Fired, I. A. E. A. (by Directors General Eckstrom & HANS BLIX), International Nuclear Metallurgy/Materials Consultant (1977)
[see: Ana Mayo, "If Leaks Could Kill", The Village Voice, p. 40 (8/21/78); Jnl. of Magnetism & Magnetic Materials 7, 312 (1978)]
[Do google search on "Edward Siegel" and see especially anti-nuc"EL"ar website www.animatedsoftware.com website and "Alloy 600"]
(see very end of this document!)
messages c/o (858) 270-5111
tat@tnl-online.com

> > > 12 NRC: Immediate order modifying PWR licenses
> > >
> > > FR Doc 03-3835
> > >
> > > [Federal Register: February 18, 2003 (Volume 68, Number 32)]
> > > [Notices] [Page 7806-7810] From the Federal Register Online via
> > > GPO Access [wais.access.gpo.gov] [DOCID:fr18fe03-81]
> > >
> > > NUCLEAR REGULATORY COMMISSION
> > > [Docket Nos. (as shown in Attachment 1), License Nos. (as shown
> > > in Attachment 1) EA-03-009]
> > >

> > > In the Matter of: All Pressurized Water Reactor Licensees;
Order Modifying Licenses (Effective Immediately) I
> > >
> > > The Licensees identified in the Attachment to this Order hold
> > > licenses issued by the U.S. Nuclear Regulatory Commission (NRC or
> > > Commission) authorizing operation of pressurized water reactor
> > > (PWR) nuclear power plants in accordance with the Atomic Energy
> > > Act of 1954 and 10 CFR part 50. II
> > >
> > > The reactor pressure vessel (RPV) heads of PWRs have penetrations
> > > for control rod drive mechanisms and instrumentation systems.
> > > Nickel- based alloys (e.g., Alloy 600) are used in the
> > > penetration nozzles and related welds[NO, INCO-182/82 TRANSITION-WELD "FILLER-METAL" IS USED; INCONEL-600 IS A WROUGHT ALLOY!!!]. Primary coolant water and
> > > the operating conditions of PWR plants can cause cracking of
> > > these nickel-based alloys through a process called primary water
> > > stress corrosion cracking (PWSCC).[BUT N O T THE ROOT-CAUSE ULTIMATE-ORIGIN, MERELY AN EFFECT, ONE OF SEVERAL EFFECTS POSSIBLE, LIKE LINKS COMPETING TO BREAK A CHAIN. WHICH LINK WINS?THE WEAKEST!]The susceptibility of RPV head
> > > penetrations to PWSCC appears to be strongly linked to the
> > > operating time and[AT!!!] temperature of the RPV head. Problems related
> > > to PWSCC have therefore increased as plants have operated for
> > > longer periods of time[A.K.A. AGEING, ACCELERATED DRASTICALLY IN OVER-AGEING!!!]. Inspections of the RPV head nozzles[WHY DO THEY CALL THEM "NOZZLES"? A "NOZZLE" IS SUPPOSED TO SPRAY SOMETHING FROM INSIDE SOME SORT OF CONTAINER TO ITS OUTSIDE, THE LAST THINK ONE WANTS WITH A NUCLEAR REACTOR PRESSURE VESSEL. THE WORD IS F L A N G E!!! OF COURSE, WITH THE VARIOUS "NOZZLE" CRACKING PROBLEMS: DAVIS-BESSIE, TEPCO IN JAPAN, EC(1/14/92 ROLLNICK FRONT PAGE ARTICLE IN THE EUROPEAN ,..., IT SEEMS THIS NAME "NOZZLES" FOR FLANGES HAS BECOME A SELF-FULFILLING PROPHESY!!!] at
> > > the Oconee Nuclear Station, Units 2 and 3 (Oconee), in early 2001
> > > identified circumferential cracking of the nozzles above the
> > > J-groove weld[INCO-182/82!!!], which joins the nozzle to the RPV head.
> > > Circumferential cracking above the J-groove weld is a safety
> > > concern because of the possibility of a nozzle ejection if the
> > > circumferential cracking is not detected and repaired.
> > >
> > > Section XI of the American Society of Mechanical Engineers Boiler
> > > and Pressure Vessel Code (ASME Code), which is incorporated into
> > > NRC regulations by 10 CFR 50.55a, ``Codes and standards,"
> > > currently specifies that inspections of the RPV head need only
> > > include a visual check for leakage on the insulated surface or
> > > surrounding area. These inspections may not detect small amounts
> > > of leakage from an RPV head penetration with cracks extending
> > > through the nozzle or the J-groove weld. Such leakage can create
> > > an environment that leads to circumferential cracks in RPV head
> > > penetration nozzles or corrosion of the RPV head. In response to
> > > the inspection findings at Oconee and because existing
> > > requirements in the ASME Code and NRC regulations do not
> > > adequately address inspections of RPV head penetrations for
> > > degradation due to PWSCC, the NRC issued Bulletin 2001-01,
> > > ``Circumferential Cracking of Reactor Pressure Vessel Head
> > > Penetration Nozzles," dated August 3, 2001. In response to the
> > > Bulletin, PWR Licensees provided their plans for inspecting RPV
> > > head penetrations and the outside surface of the heads to
> > > determine whether any nozzles were leaking.
> > >

> > > In early March 2002, while conducting inspections of reactor
> > > vessel head penetrations prompted by Bulletin 2001-01, the
> > > Licensee for the Davis-Besse Nuclear Power Station (Davis-Besse)
> > > identified a cavity in the reactor vessel head near the top of
> > > the dome. The cavity was next to a leaking nozzle [[Page 7807]]
> > > with a through-wall axial crack and was in an area of the reactor
> > > vessel head that the Licensee had left covered with boric acid
> > > deposits for several years. On March 18, 2002, the NRC issued
> > > Bulletin 2002-01, ``Reactor Pressure Vessel Head Degradation and
> > > Reactor Coolant Pressure Boundary Integrity,'' which requested
> > > PWR Licensees to provide information on their reactor vessel head
> > > inspection and maintenance programs, the material condition of
> > > their reactor vessel heads, and their boric acid inspection
> > > programs. In their responses, the Licensees provided information
> > > about their boric acid inspection programs and their inspections
> > > and assessments to ensure that their respective plant did not
> > > have reactor vessel head degradation like that identified at
> > > Davis-Besse.
> > >
> > > The experience at Davis-Besse and the discovery of leaks and
> > > nozzle cracking at other plants reinforced the need for more
> > > effective inspections of RPV head penetration nozzles. The
> > > absence of an effective inspection regime could, over time,
> > > result in unacceptable circumferential cracks in RPV head
> > > penetration nozzles or in the degradation of the RPV head by
> > > corrosion. These degradation mechanisms increase the probability
> > > of a more significant loss of reactor coolant pressure boundary
> > > through ejection of a nozzle or other rupture of the RPV head.
> > > The NRC issued Bulletin 2002-02, ``Reactor Pressure Vessel Head
> > > and Vessel Head Penetration Nozzle Inspection Programs,'' dated
> > > August 9, 2002, requesting that Licensees provide information
> > > about their inspection programs and any plans to supplement
> > > existing visual inspections with additional measures (e.g.,
> > > volumetric and surface examinations). Licensees have responded to
> > > Bulletin 2002-02 with descriptions of their inspection plans for
> > > at least the first refueling outage following the issuance of
> > > Bulletin 2002-02 or with a schedule to submit such descriptions
> > > before the next refueling outage. Many of the Licensees'
> > > responses to Bulletin 2002-02 did not describe long-term
> > > inspection plans. Instead the Licensees stated that they would
> > > follow guidance being developed by the industry-sponsored
> > > Materials Reliability Program.
> > >
> > > Inspections performed at several[ONLY "SEVERAL"???; HOW ABOUT A N Y / A L L???!!!] PWR
plants in late 2002 found
> > > leakage and cracks in nozzles or J-groove welds that have
> > > required repairs or prompted the replacement of the RPV head. In
> > > addition, as discussed in NRC Information Notice 2003-02,
> > > ``Recent Experience with Reactor Coolant System Leakage and Boric
> > > Acid Corrosion,'' issued January 16, 2003, leakage has recently
> > > occurred at some plants from connections above the RPV head and
> > > has required additional assessments and inspections to ensure
> > > that the leakage has not caused significant degradation of RPV
> > > heads. !!!
> > >
> > > Based on recent experience, current inspection requirements in

> > > the ASME Code and related NRC regulations do not provide adequate
> > > assurance that reactor coolant pressure boundary integrity will
> > > be maintained for all combinations of construction materials,
> > > operating conditions, and operating histories at PWRs. The
> > > long-term resolution of RPV head penetration inspection
> > > requirements is expected to involve changes to the ASME Code and
> > > NRC regulations, specifically 10 CFR 50.55a. Research being
> > > conducted by the NRC and industry is increasing our understanding
> > > of material performance, improving inspection capabilities, and
> > > supporting assessments of the risks to public health and safety
> > > associated with potential degradation of the RPV head and
> > > associated penetration nozzles. These research activities are
> > > important to the long term development of revisions to the ASME
> > > Code and NRC regulations.
> > >
> > > The operating history of PWRs supports a general correlation
> > > among certain operating parameters, including the length of time
> > > plants have been in operation, and the likelihood of occurrence
> > > of PWSCC of nickel- based alloys used in RPV head penetration
> > > nozzles. Bulletin 2002-02 presented a three-tier categorization
> > > of susceptibility to RPV head penetration nozzle degradation
> > > based on reactor operating durations and temperatures. Licensees'
> > > responses to the Bulletin included an estimate of the effective
> > > degradation years (EDY) and the appropriate categorization of
> > > each plant into one of the three susceptibility categories. Each
> > > Licensee proposed an inspection plan for RPV head penetrations
> > > based upon the susceptibility to degradation via PWSCC (as
> > > represented by the value of EDY calculated for the facility). In
> > > addition, recent operating experience has shown that, under
> > > certain conditions, leakage from mechanical and welded
> > > connections above the RPV head can lead to the degradation of the
> > > low alloy steel head by boric acid corrosion.
> > >
> > > Revising the ASME Code and subsequently the NRC regulations will
> > > take several years. The Licensees' actions to date in response to
> > > the NRC bulletins have provided reasonable assurance of adequate
> > > protection of public health and safety for the near term
> > > operating cycles, but cannot be relied upon to do so for the
> > > entire interim period until NRC regulations are revised.
> > > Additional periodic inspections of RPV heads and associated
> > > penetration nozzles at PWRs, as a function of the unit's
> > > susceptibility to PWSCC and as appropriate to address the
> > > discovery of boron deposits, are necessary to provide reasonable
> > > assurance that plant operations do not pose an undue risk to the
> > > public health and safety. Consequently, it is necessary to
> > > establish a minimum set of RPV head inspection requirements, as a
> > > supplement to existing inspection and other requirements in the
> > > ASME Code and NRC regulations, through the issuance of an Order
> > > to PWR Licensees.
> > >
> > > It is appropriate and necessary to the protection of public
> > > health and safety to establish a clear regulatory framework,
> > > pending the development of consensus standards and incorporation
> > > of revised inspection requirements into 10 CFR 50.55a, directly
> > > or through reference to a future version of the ASME Code. In
> > > order to provide reasonable assurance of adequate protection of

> > > public health and safety for the interim period, all PWR Licenses
> > > identified in the Attachment to this Order shall be modified to
> > > include the inspection requirements for RPV heads and associated
> > > penetration nozzles identified in Section IV of this Order. The
> > > NRC requirements imposed by this Order are based on the body of
> > > evidence available through February 2003. Continuing research and
> > > operating experience may support future changes to the
> > > requirements imposed through this Order. In addition, pursuant to
> > > 10 CFR 2.202, I find that in the circumstances described above,
> > > the public health, safety, and interest require that this Order
> > > be immediately effective. IV
> > >
> > > Accordingly, pursuant to sections 103, 104b, 161b, 161i, 161o,
> > > 182, and 186 of the Atomic Energy Act of 1954, as amended, and
> > > the Commission's regulations in 10 CFR 2.202 and 10 CFR part 50,
> > > it is hereby ordered, effective immediately, that all licenses
> > > identified in the attachment to this order are modified as
> > > follows:
> > >
> > > A. To determine the required inspection(s) for each refueling
> > > outage at their facility, all Licensees shall calculate the
> > > susceptibility category of each reactor vessel head to
> > > PWSCC-related degradation, as represented by a value of EDY for
> > > the end of each operating cycle, using the following equation:
> > > [[Page 7808]]
> > >
> > > [GRAPHIC] [TIFF OMITTED] TN18FE03.013
> > >
> > > Where: EDY = total effective degradation years, normalized to a
> > > reference temperature of 600 [deg]F [Delta]EFPYj = operating time
> > > in years at Thead,j Qi = activation energy for crack initiation
> > > (50 kcal/mole) R = universal gas constant (1.103x10-3
> > > kcal/mole[deg]R) Thead,j = 100% power head temperature during
> > > time period j ([deg]R = [deg]F + 459.67),Tref = reference
> > > temperature (600 [deg]F = 1059.67 [deg]R) n = number of different
> > > head temperatures during plant history
> > >
> > > This calculation shall be performed with best estimate values for
> > > each parameter at the end of each operating cycle for the RPV
> > > head that will be in service during the subsequent operating
> > > cycle. The calculated value of EDY shall determine the
> > > susceptibility category and the appropriate inspection for the
> > > RPV head during each refueling outage.
> > >
> > > B. All Licensees shall use the following criteria to assign the
> > > RPV head at their facility to the appropriate PWSCC
> > > susceptibility category: High--(1) Plants with a calculated value
> > > of EDY greater than 12, OR (2) Plants with an RPV head that has
> > > experienced cracking in a penetration nozzle or J-groove weld due
> > > to PWSCC. Moderate--Plants with a calculated value of EDY less
> > > than or equal to 12 and greater than or equal to 8 AND no
> > > previous inspection findings requiring classification as High.
> > > Low--Plants with a calculated value of EDY less than 8 AND no
> > > previous inspection findings requiring classification as High.
> > >
> > > C. All Licensees shall perform inspections of the RPV head

> > > \1\ using the following techniques and frequencies.\2\
> > >
> > >
> > > \1\ This Order imposes additional inspection requirements.
> > > Licensees are required to address any findings from these
> > > inspections (i.e., perform analyses and repairs) in accordance
> > > with existing requirements in the ASME Code and 10 CFR 50.55a.
> > > The NRC has issued guidance to address flaw evaluations for RPV
> > > head penetration nozzles (see letter dated November 21, 2001,
> > > from J. Strosnider, NRC, to A. Marion, Nuclear Energy Institute)
> > > and will, as necessary, issue revised guidance pending the
> > > updating of the ASME Code and related NRC regulations.
> > >
> > > \2\ The requirements of this Order are generally consistent with
> > > inspection plans that the NRC staff accepted in letters to some
> > > Licensees regarding their responses to Bulletin 2002-02. If the
> > > NRC staff has already accepted a specific variation from the
> > > requirements of this Order (e.g., inspections to less than two
> > > (2) inches above the J-groove weld), the Licensee may continue
> > > with the previously accepted inspection plan for the next
> > > refueling outage after issuance of this Order, provided that in
> > > its response to this Order the Licensee identifies all
> > > discrepancies between the requirements of this Order and the
> > > previously accepted inspection plan. Licensees proposing to
> > > deviate from the requirements of this Order for subsequent
> > > refueling outages shall seek relaxation of this Order pursuant to
> > > the procedure specified at the end of this Section.
> > >
> > > (1) For those plants in the High category, RPV head and head
> > > penetration nozzle inspections shall be performed using the
> > > following techniques every refueling outage.\3\
> > >
> > >
> > > \3\ For repaired RPV head penetration nozzles that establish a
> > > new pressure boundary, the ultrasonic testing inspection shall
> > > include the weld and at least one (1) inch above the weld in the
> > > nozzle base material. For RPV head penetration nozzles or
> > > J-groove welds repaired using a weld overlay, the overlay shall
> > > be examined by either ultrasonic, eddy current, or dye penetrant
> > > testing in addition to the examinations required by (1)(b)(i) or
> > > (1)(b)(ii).
> > >
> > > (a) Bare metal visual examination of 100% of the RPV head surface
> > > (including 360[deg] around each RPV head penetration nozzle), AND
> > >
> > > (b) Either:
> > >
> > > (i) Ultrasonic testing of each RPV head penetration nozzle (i.e.,
> > > nozzle base material) from two (2) inches above the J-groove weld
> > > to the bottom of the nozzle and an assessment to determine if
> > > leakage has occurred into the interference fit zone, OR
> > >
> > > (ii) Eddy current[CAN'T WORK SINCE (SO MISCALLED) "SUPER"ALLOYS GET FERROMAGNETIC DURING THEIR WIGNER'S-DISEASE/OVERAGEING-EMBRITTLEMENT/OSTWALD-RIPENING/SPINODAL-DECOMPOSITION/ "SENSITIZATION" !!! (SEE E. Siegel: Intl. Conf. on Magnetic Alloys and Oxides, The Technion,

Haifa, Israel (1977); published in: Jnl. Magnetism & Magnetic Materials 7, 312 (1978)] testing or dye penetrant testing of the wetted
> > > surface of each J-Groove weld and RPV head penetration nozzle
> > > base material to at least two (2) inches above the J-groove weld.
> > >
> > > (2) For those plants in the Moderate category, RPV head and head
> > > penetration inspections shall be performed such that at least the
> > > requirements of 2(a) or 2(b) are performed each refueling outage.
> > > In addition the requirements of 2(a) and 2(b) shall each be
> > > performed at least once over the course of every two (2)
> > > refueling outages.
> > >
> > > (a) Bare metal visual examination of 100% of the RPV head surface
> > > (including 360[deg] around each RPV head penetration nozzle).
> > >
> > > (b) Either:
> > >
> > > (i) Ultrasonic testing of each RPV head penetration nozzle (i.e.,
> > > nozzle base material) from two (2) inches above the J-groove weld
> > > to the bottom of the nozzle and an assessment to determine if
> > > leakage has occurred into the interference fit zone, OR
> > >
> > > (ii) Eddy current[CAN'T WORK SINCE (SO MISCALLED) "SUPER"ALLOYS GET FERROMAGNETIC DURING THEIR WIGNER'S-DISEASE/OVERAGEING-EMBRITTLEMENT/OSTWALD-RIPENING/SPINODAL-DECOMPOSITION/ "SENSITIZATION" !!! (SEE E. Siegel: Intl. Conf. on Magnetic Alloys and Oxides, The Technion, Haifa, Israel (1977); published in: Jnl. Magnetism & Magnetic Materials 7, 312 (1978)] testing or dye penetrant testing of the wetted
> > > surface of each J-Groove weld and RPV head penetration nozzle
> > > base material to at least two (2) inches above the J-groove weld.
> > >
> > > (3) For those plants in the Low category, RPV head and head
> > > penetration nozzle inspections shall be performed as follows. An
> > > inspection meeting the requirements of 3(a) must be completed at
> > > least every third refueling outage or every five (5) years,
> > > whichever occurs first. If an inspection meeting the requirements
> > > of 3(a) was not performed during the refueling outage immediately
> > > preceding the issuance of this Order, the Licensee must complete
> > > an inspection meeting the requirements of 3(a) within the first
> > > two (2) refueling outages following issuance of this Order. The
> > > requirements of 3(b) must be completed at least once over the
> > > course of five (5) years after the issuance of this Order and
> > > thereafter at least every four (4) refueling outages or every
> > > seven (7) years, whichever occurs first.
> > >
> > > (a) Bare metal visual examination of 100% of the RPV head surface
> > > (including 360[deg] around each RPV head penetration nozzle).
> > >
> > > (b) Either:
> > >
> > > (i) Ultrasonic testing of each RPV head penetration nozzle (i.e.,
> > > nozzle base material) from two (2) inches above the J-groove weld
> > > to the bottom of the nozzle and an assessment to determine if
> > > leakage has occurred into the interference fit zone, or
> > >
> > > (ii) Eddy current[CAN'T WORK SINCE (SO MISCALLED) "SUPER"ALLOYS GET

FERROMAGNETIC DURING THEIR
WIGNER'S-DISEASE/OVERAGEING-EMBRITTLEMENT/OSTWALD-RIPENING/SPINODAL-DECOMPOSITION/ "SENSITIZATION" !!! (SEE E. Siegel: Intl. Conf. on Magnetic Alloys and Oxides, The Technion, Haifa, Israel (1977); published in: Jnl. Magnetism & Magnetic Materials 7, 312 (1978)] testing or dye penetrant testing of the wetted
> > > surface of each J-Groove weld and RPV head penetration nozzle
> > > base material to at least two (2) inches above the J-groove weld.
> > >
[SIMPLE MAGNETIZATION &/or MAGNETIC-SUSCEPTIBILITY MEASUREMENTS (Prof. ARROTT is THE WORLD'S GREATEST EXPERT ON SUCH MEASUREMENTS; DRS. SWARTZENDRUBER (& BENNETT) DID SOME OF THE WORK PUBLISHED IN MY 1976-1977 PAPER QUOTED HEREIN!) WOULD WORK JUST FINE, {SINCE (SO MISCALLED) "SUPER"ALLOYS GET STRONGLY FERROMAGNETIC DURING THEIR WIGNER'S-DISEASE/OVERAGEING-EMBRITTLEMENT/ OSTWALD-RIPENING/SPINODAL-DECOMPOSITION/ "SENSITIZATION" !!! (see my paper: E. Siegel: Intl. Conf. on Magnetic Alloys and Oxides, The Technion, Haifa, Israel (1977); published in: Jnl. Magnetism & Magnetic Materials 7, 312 (1978)-ESPECIALLY F I R S T PAGE!!!}. I SUGGEST ON THESE EMBRITTLED/CRACKED (SO MISCALLED) "SUPER"ALLOYS (BUT, IT, BEING SO CHEAP AND EASY, SHOULD HAVE BEEN (PAST TENSE!!!) DONE CONTINUOUSLY BEFORE THEY CRACKED; NOW IT'S TOO LATE BECAUSE THERE IS N O WAY TO REPAIR A CRACK!!) THE "VERY ADVANCED" "HIGH-TECH" "BREUGERS BAGEL-OMETER" TEST(but of course te NRC never could/would simply because they still, after denying my two complaints to their inspector-general over this FRAUD, simply haveN'T a CLUE about what is REALLY going on, still blaming it on (it's like saying something "broke simply because it broke" (i. e. the patient with HIV leading to AIDS who died of, say TB,, "died because he contracted TB".With HIV caused AIDS lowering his immune system, he would have died of something eventually among the competing diseases in the environment one is exposed to; it's like the question: "which link breaks a chain", with common sense answer "the weakest"); a tautology that teaches you and show's that you've/THE N. R. C. has learned absolutely nothing!!!); a BRUEGERS BAGEL (horrible bagels if you're from Brooklyn or New York City and especially if you're Jewish; they're merely white bread with a hole in the middle; you could not give them away for free to welfare recipients in New York!!!) "STICK-ON\" (LIKE A REFRIGERATOR STICK-ON FOR NOTES/MESSAGES) IS HELD AGAINST A FLAT SURFACE OF THE (SO MISCALLED) "SUPER"ALLOY IN THE REACTOR; IF IT FALLS OFF, O. K. (PROBABLY N O PROBLEM, Y E T!); IF IT STICKS (OR YOUR (QUITE SENSITIVE)) FINGERTIPS HOLDING THE "STICK ON" FEEL A MAGNETIC FORCE), THEN DO A LOCAL MICROHARDNESS TEST (KNOOP, VICKERS,...) TO SEE IF IT IS HARDENED ABOVE WHAT IT SHOULD BE (a. k. a. embrittled; usually harder things are more brittle!), ("OPTIONAL": THEN DO A CHEMISTRY QUANTITATIVE-ANALYSIS TO MAKE SURE IT'S THE CORRECT (SO MISCALLED) "SUPER"ALLOY,SINCE MOST METALS/ALLOYS ARE SILVERY-GREY, AND YOU'D BE SURPRISED (BUT SHOULDN'T BE!!!) AT HOW THE W R O N G ALLOYS CAN BE AND TOO OFTEN ARE USED IN FABRICATION/CONSTRUCTION, ESPECIALLY THE (SO MISCALLED) "SUPER"ALLOYS IN NUCLEAR-REACTORS; JET-ENGINES; MISSILE ENGINES, REFINERIES; CHEMICAL-PLANTS, ... !!!]

> > > D. During each refueling outage, visual inspections shall be
> > > performed to identify potential boric acid leaks from pressure-
> > > retaining components above the RPV head. For any plant with boron
> > > deposits on the surface of the RPV head or related insulation,
> > > discovered either during the inspections required by this Order
> > > or otherwise and regardless of the source of the deposit, before
> > > returning the plant to operation the Licensee shall perform
> > > inspections of the affected RPV head surface and penetrations
> > > appropriate to the conditions found to verify the integrity of
> > > the affected area and penetrations. [[Page 7809]]
> > >
> > > E. For each inspection required in Paragraph C, the Licensee
> > > shall submit a report detailing the inspection results within
> > > sixty (60) days after returning the plant to operation.\4\ For
> > > each inspection required in Paragraph D, the Licensee shall

> > > submit a report detailing the inspection results within sixty
> > > (60) days after returning the plant to operation if a leak or
> > > boron deposit was found during the inspection.
> > >
> > >
> > > \4\ This reporting requirement supercedes the 30-day reports
> > > requested by NRC Bulletin 2002-02.
> > >
> > > F. In the response required by Section V of this Order, all
> > > Licensees shall notify the Commission if: (1) They are unable to
> > > comply with any of the requirements of Section IV, or (2)
> > > compliance with any of the requirements of Section IV is
> > > unnecessary. Licensees proposing to deviate from the requirements
> > > of this Order shall seek relaxation of this Order pursuant to the
> > > procedure specified below.
> > >
> > > The Director, Office of Nuclear Reactor Regulation, may, in
> > > writing, relax or rescind any of the above conditions upon
> > > demonstration by the Licensee of good cause. A request for
> > > relaxation regarding inspection of specific nozzles shall also
> > > address the following criteria:
> > >
> > > (1) The proposed alternative(s) for inspection of specific
> > > nozzles will provide an acceptable level of quality and safety,
> > > or
> > >
> > > (2) Compliance with this Order for specific nozzles would result
> > > in hardship or unusual difficulty without a compensating increase
> > > in the level of quality and safety.
> > >
> > > Requests for relaxation associated with specific penetration
> > > nozzles will be evaluated by the NRC staff using its procedure
> > > for evaluating proposed alternatives to the ASME Code in
> > > accordance with 10 CFR 50.55a(a)(3). V
> > >
> > > In accordance with 10 CFR 2.202, the Licensee must, and any other
> > > person adversely affected by this Order may, submit an answer to
> > > this Order, and may request a hearing on this Order, within
> > > twenty (20) days of the date of this Order. Where good cause is
> > > shown, consideration will be given to extending the time to
> > > request a hearing. A request for extension of time in which to
> > > submit an answer or request a hearing must be made in writing to
> > > the Director, Office of Nuclear Reactor Regulation, U.S. Nuclear
> > > Regulatory Commission, Washington, DC 20555, and include a
> > > statement of good cause for the extension. The answer may consent
> > > to this Order. Unless the answer consents to this Order, the
> > > answer shall, in writing and under oath or affirmation,
> > > specifically set forth the matters of fact and law on which the
> > > Licensee or other person adversely affected relies and the
> > > reasons as to why the Order should not have been issued. Any
> > > answer or request for a hearing shall be submitted to the
> > > Secretary, Office of the Secretary of the Commission, U.S.
> > > Nuclear Regulatory Commission, ATTN: Rulemakings and
> > > Adjudications Staff, Washington, DC 20555. Copies shall also be
> > > sent to the Director, Office of Nuclear Reactor Regulation, U.S.
> > > Nuclear Regulatory Commission, Washington, DC 20555; to the

> > > Assistant General Counsel for Materials Litigation and
> > > Enforcement at the same address; to the Regional Administrator
> > > for NRC Region I, II, III, or IV, as appropriate for the specific
> > > plant; and to the Licensee if the answer or hearing request is by
> > > a person other than the Licensee. Because of possible disruptions
> > > in delivery of mail to United States Government offices, it is
> > > requested that answers and requests for hearing be transmitted to
> > > the Secretary of the Commission either by means of facsimile
> > > transmission to 301-415-1101 or by e-mail to
> > > hearingdocket@nrc.gov and also to the Assistant General Counsel
> > > for Materials Litigation and Enforcement either by means of
> > > facsimile transmission to 301-415-3725 or by e-mail to
> > > OGCMailCenter@nrc.gov. If a person other than the Licensee
> > > requests a hearing, that person shall set forth with
> > > particularity the manner in which his interest is adversely
> > > affected by this Order and shall address the criteria set forth
> > > in 10 CFR 2.714(d).\5\
> > >
> > > \5\ The version of Title 10 of the Code of Federal Regulations,
> > > published January 1, 2002, inadvertently omitted the last
> > > sentence of 10 CFR 2.714 (d) and paragraphs (d)(1) and (d)(2)
> > > regarding petitions to intervene and contentions. For the
> > > complete, corrected text of 10 CFR 2.714 (d), please see 67 FR
> > > 20884, April 29, 2002.
> > >
> > >
> > > If a hearing is requested by the Licensee or a person whose
> > > interest is adversely affected, the Commission will issue an
> > > Order designating the time and place of any hearing. If a hearing
> > > is held, the issue to be considered at such hearing shall be
> > > whether this Order should be sustained.
> > >
> > > Pursuant to 10 CFR 2.202(c)(2)(i), the Licensee may, in addition
> > > to demanding a hearing at the time the answer is filed or sooner,
> > > move the presiding officer to set aside the immediate
> > > effectiveness of the Order on the ground that the Order,
> > > including the need for immediate effectiveness, is not based on
> > > adequate evidence but on mere suspicion, unfounded allegations,
> > > or error.
> > >
> > > In the absence of any request for hearing, or written approval of
> > > an extension of time in which to request a hearing, the
> > > provisions specified in Section IV above shall be final twenty
> > > (20) days from the date of this Order without further order or
> > > proceedings. If an extension of time for requesting a hearing has
> > > been approved, the provisions specified in Section IV shall be
> > > final when the extension expires if a hearing request has not
> > > been received. An answer or request for hearing shall not stay
> > > the immediate effectiveness of this order.
> > >
> > > Dated this 11th day of February, 2003.
> > >
> > > For the Nuclear Regulatory Commission. Samuel J. Collins,
> > > Director, Office of Nuclear Reactor Regulation.
> > >
> > > Attachment to Order:

> > > Facilities
> > > Beaver Valley Power Station, Units 1 and 2
> > > Docket Nos. 50-334 and 50-412
> > > License Nos. DPR-66 and NPF-73
> > > Calvert Cliffs Nuclear Power Plant,
> > > Units 1 and 2
> > > Docket Nos. 50-317 and 50-318
> > > License Nos. DPR-53 and DPR-69
> > > R.E. Ginna Nuclear Power Plant
> > > Docket No. 50-244
> > > License No. DPR-18
> > > Indian Point Nuclear Generating Station,
> > > Units 2 and 3
> > > Docket Nos. 50-247 and 50-286
> > > License Nos. DPR-26 and DPR-64
> > > Millstone Power Station, Units 2 and 3
> > > Docket Nos. 50-336 and 50-423
> > > License Nos. DPR-65 and NPF-49
> > > Salem Nuclear Generating Station,
> > > Units 1 and 2 [OLD HOME WEEK!!!]
> > > Docket Nos. 50-272 and 50-311
> > > License Nos. DPR-70 and DPR-75
> > > Seabrook Station, Unit 1
> > > Docket No. 50-443
> > > License No. NPF-86
> > > Three Mile Island Nuclear Station, Unit 1
> > > Docket No. 50-289
> > > License No. DPR-50
> > > Catawba Nuclear Station, Units 1 and 2
> > > Docket Nos. 50-413 and 50-414
> > > License Nos. NPF-35 and NPF-52
> > > Crystal River Nuclear Power Plant
> > > Docket No. 50-302
> > > License No. DPR-72
> > > Joseph M. Farley Nuclear Plant,
> > > Units 1 and 2
> > > Docket Nos. 50-348 and 50-364
> > > License Nos. NPF-2 and NPF-8
> > > Shearon Harris Nuclear Power Plant, Unit 1
> > > Docket No. 50-400
> > > License No. NPF-63
> > > William B. McGuire Nuclear Station,
> > > Units 1 and 2
> > > Docket Nos. 50-369 and 50-370
> > > License Nos. NPF-9 and NPF-17
> > > North Anna Power Station, Units 1 and 2
> > > Docket Nos. 50-338 and 50-339
> > > License Nos. NPF-4 and NPF-7
> > > [[Page 7810]]
> > > Surry Power Station, Units 1 and 2
> > > Docket Nos. 50-280 and 50-281
> > > License Nos. DPR-32 and DPR-37
> > > Oconee Nuclear Station, Units 1, 2 and 3
> > > Docket Nos. 50-269, 50-270 and 50-287
> > > License Nos. DPR-38, DPR-47 and DPR-55
> > > H.B. Robinson Steam Electric Plant, Unit 2

> > > Docket No. 50-261
> > > License No. DPR-23
> > > St. Lucie Nuclear Plant, Units 1 and 2
> > > Docket Nos. 50-335 and 50-389
> > > License Nos. DPR-67 and NPF-16
> > > Turkey Point Nuclear Generating Station,
> > > Units 3 and 4
> > > Docket Nos. 50-250 and 50-251
> > > License Nos. DPR-31 and DPR-41
> > > Sequoyah Nuclear Plant, Units 1 and 2
> > > Docket Nos. 50-327 and 50-328
> > > License Nos. DPR-77 and DPR-79
> > > Watts Bar Nuclear Plant, Unit 1
> > > Docket No. 50-390
> > > License No. NPF-90
> > > Virgil C. Summer Nuclear Station, Unit 1
> > > Docket No. 50-395
> > > License No. NPF-12
> > > Vogtle Electric Generating Plant,
> > > Units 1 and 2
> > > Docket Nos. 50-424 and 50-425
> > > License Nos. NPF-68 and NPF-81
> > > Braidwood Station, Units 1 and 2
> > > Docket Nos. STN 50-456 and STN 50-457
> > > License Nos. NPF-72 and NPF-77
> > > Byron Station, Units 1 and 2
> > > Docket Nos. STN 50-454 and STN 50-455
> > > License Nos. NPF-37 and NPF-66
> > > Donald C. Cook Nuclear Plant, Units 1 and 2
> > > Docket Nos. 50-315 and 50-316
> > > License Nos. DPR-58 and DPR-74
> > > Davis-Besse Nuclear Power Station, Unit 1
> > > Docket No. 50-346
> > > License No. NPF-3
> > > Kewaunee Nuclear Power Plant
> > > Docket No. 50-305
> > > License No. DPR-43
> > > Palisades Plant
> > > Docket No. 50-255
> > > License No. DPR-20
> > > Point Beach Nuclear Plant, Units 1 and 2
> > > Docket Nos. 50-266 and 50-301
> > > License Nos. DPR-24 and DPR-27
> > > Prairie Island Nuclear Generating Plant, Units 1 and 2
> > > Docket Nos. 50-282 and 50-306
> > > License Nos. DPR-42 and DPR-60
> > > Arkansas Nuclear One, Units 1 and 2
> > > Docket Nos. 50-313 and 50-368
> > > License Nos. DPR-51 and NPF-6
> > > Callaway Plant, Unit 1
> > > Docket No. 50-483
> > > License No. NPF-30
> > > Comanche Peak Steam Electric Station,
> > > Units 1 and 2
> > > Docket Nos. 50-445 and 50-446
> > > License Nos. NPF-87 and NPF-89

> > > Diablo Canyon Nuclear Power Plant,
> > > Units 1 and 2
> > > Docket Nos. 50-275 and 50-323
> > > License Nos. DPR-80 and DPR-82
> > > Fort Calhoun Station, Unit 1
> > > Docket No. 50-285
> > > License No. DPR-40
> > > Palo Verde Nuclear Generating Station,
> > > Units 1, 2 and 3
> > > Docket Nos. STN 50-528, STN 50-529 and
> > > STN 50-530
> > > License Nos. NPF-41, NPF-51 and NPF-74
> > > San Onofre Nuclear Station, Units 2 and 3
> > > Docket Nos. 50-361 and 50-362
> > > License Nos. NPF-10 and NPF-15
> > > South Texas Project Electric Generating Station, Units 1 and 2
> > > Docket Nos. 50-498 and 50-499
> > > License Nos. NPF-76 and NPF-80
> > > Waterford Steam Electric Generating Station, Unit 3
> > > Docket No. 50-382
> > > License No. NPF-38
> > > Wolf Creek Generating Station, Unit 1
> > > Docket No. 50-482
> > > License No. NPF-42
> > > [FR Doc. 03-3835 Filed 2-14-03; 8:45 am]
> > > BILLING CODE 7590-01-P
> >
>

The U. S. S. KURSK:

GENERIC ENDEMIC Navy (SSN, SSBN, CVN) / Utility

NUC"EL"AR "ACCIDENTS"/TERRORISTS TARGETS

WAITING TO HAPPEN

(Courtesy:

Westin"KL"ouse, G.-E., P. & W./U.-T., A.B.B./C.-E., B. & W., Elgin, Inco, Haynes, Cabot, Prudential..., Morgan/Brown-Louis-Githers-Ahn-.-Ashpahani, Boeing, Lockheed-Martin, and metals/alloys-TRADERS: Perrot, Enron!!!, Andersen!!! .)

"Señor Admirállssimo El Exigente ("OsamaBin")von"

Dr. E. Siegel"

Consultant

ThermAlloy Technology Ltd. (TAT(L))

(Avenger of U.K. Admiral Sir Walter Raleigh's 1492 British Fleet Vanquishing of the Spanish Armada)

(a.k.a. Lawrence of "Arabia"(???) Siegel of Brooklyn

messages c/o (858) 270-5111

tat@tnl-online.com

· very recent Davis-Bessie (a.k.a. "Betty Davis" (sorry Betty!)) B.&W.. P.W.R. (with water-temperature @ ~642 F,(a.k.a. "666") simply UNbelievable nuc"EL"ar "accident" WAITING TO HAPPEN (see www.toledoblade.com, Tom Henry (3/12/02, 4/6/02, 4/12/02) and ongoing!!!; www.nirs.org, Front page/March Newsletter: "Millimeters from Catastrophe"; ., M. Wald, New York Times (poor by-rote NRC/DoE-shill coverage)); Keith Brown, on Bill Moyers "Now" (1/24/03)

· very recent Hamaoka I Toshiba- G.-E. B.W.R., Chubu Electric Co. Japan (www.japantimes.com (11/10/01, 11/17/01, 12/26/01) FAILURE of ALL INCO-182/82 transition-welds EXACTLY AS SIEGEL (among many many others!!!) PREDICTED SO LONG AGO!!! (1974-1978) with systematic/systematically ignored by: A.E.C., E.R.D.A., N.R.C., D.o.E. [see: Lawrence Pringle book, "Nuc'EL'ar Power: From Physics to Politics"(1979)] ; Intl. Conf. on Magnetic Alloys and Oxides, The Technion, Haifa, Israel (8-9/1977); Jnl. Magnetism & Magnetic Materials 7, 31 (1978); Ana Mayo, The Village Voice, p. 40 (8/21/78); Howard French, Tokyo Bureau Chief, The New York Times;.

· very recent Barensbuttel (Germany) P.W.R. and Temlin (Slovakia) P.W.R. ((supposedly)"repaired" by Westin"KL"ouse!!!) - (2001) - see: www.nirs.org (2001); www.japantimes.com(?); .

· recent (5/19/00; Gibraltar/Algericas Bay) H. M. S. Tire"less"d SSN nuclear attack-submarine [Reuters News dispatch: (San Diego Union Tribune, p. 2, 10/22/00) but "amazingly" in no other national U. S. paper: neither: N.Y.T., nor L. A. T., nor W.-P.,...-talk about managed news!!!]; [also: in El Pais (Madrid, Spain major daily (10/31/00) - on WWW) & Fiona Botsford (and Christian Fraser?) on B.B.C. News, [N.P.T.V.; KPBS-Ch.15 (10/31/00), in which Spanish Prime Minister demanded to British Prime Minister that the U.K. "tow it our of Iberian waters forthwith!"], now renamed the H. M. S. "Aged" & Tired) and dry-dock/inspections of whole rest (12) of U.K. SSN nuclear attack-sub fleet, necessitating U. S. Navy guarding of their U. K. whole SSBN nuclear fleet ballistic-missile boats & G.-E.-KAPL core-meltdown diagnosis (518) 587-3245 / Jackshal@aol.com· plus older French nuclear attack-submarine SSN Emeraud steam-"leak" killing Captain and Nine Crew (Boston Globe, p.25, 3/31/94),· plus recent dire warning on Internet by John. P. Shannon and Bob Stater, [G.-E. Knolls Atomic Power Laboratory (KAPL) retired Nuclear Engineers, Former Health and Safety Manager, designers of Navy nuclear-reactor cores for some thirty years; @ 262 Jones Rd., Saratoga Springs, N. Y. 12866 / tel: (518) 587-3245 / Jackshal@aol.com] that the H.M.S. Tire"less"d , with no loss-of-coolant (LOC) emergency-core-cooling-system (ECCS) [as do all other nuclear Navy ships of any/all types and any/all countries similarly lack] actually suffered a loss-of-coolant-"accident" (LOCA; "China-Syndrome") on 5/19/00 and is then/ still(?) now(?) stuck powerless and unmovable in Gibraltar/Algereicas Bay, and that ... · ALL 57 U.S. SSN attack-submarines' nuclear-reactor cores (which they designed for 30 years) should be as susceptible to and hence suffer similar LOCA "China-Syndrome" problems in the future!!!

· early unheeded by both nuclear Navy(ies)/commercial nuclear utilities metallurgical dire warnings of (so MIScalled/MISmarketed) "super"alloy generic endemic "Wigner's-disease"/OVERageing-embrittlement/"Ostwald-ripening" thermal-leading-to-mechanical ("TLTM")-INstability both in-fabrication and or/ in-service problems warnings:

· (the) Dr. Eugene P. Wigner (he who took Einstein's letter to Roosevelt), Jnl. Applied Physics 17, 857 (1946)

· Dr. E. Siegel (Metallurgist), Jnl. Magnetism & Magnetic Materials, 7, 312 (1978) @ Intl. Conf. on Magnetic Alloys and Oxides, (ICMAO), Technion, Haifa, Israel (8-9/1977)
· Ana Mayo, the Village Voice, "If Leaks Could Kill", Geiger Counter Column, p. 40 (8/21/78)

· Dr. G. Lai, Metallurgical Transactions AIME, 9A, 827 (1978) - especially unbelievable Fig. 2/y-axis!!!)

· Dr. J. R. Kattus, Code # 4112, U. S. DoD Aerospace Structural Materials Handbook, Battelle (1983)

· Dr. E. Siegel (abstract) 1978 - prediction of Monju, Japan Breeder Reactor nuclear "accident" (Japan Times, front page (12/10-12/95) & thereafter - on WWW in English)

· E. C. (esp. France & Germany) mandatory commercial nuclear-reactor pressure-vessel heads and cooling piping replacements due to embrittlement-cracking, . (see: R. Rollnick, The European, (1/14/93) front page headlines; Greenpeace Zurich press-releases (~1990's);.)

· E. Savage and E. Nippies, Jnl. Welding (1963-67) - many technical papers on "super"alloy welds generic embrittlement

· Howard Richards(RIP), metallurgist, PSE&G (largest utility/N. J.) suppressed dire multi-decade warnings, suppressed by: P. S. E. & G., A. E. C., E. R. D. A., D. o. E., N. R. C.,.

· Professor W. B. Pearson, renowned Canadian metallurgist, President (ret.)University of Waterloo - multi-decade dire warnings of generic "super"alloy overageing-embrittlement catastrophic-failures in nuclear power-plants

· R.M.S.S. TITANIC, (W. Broad, N.Y.T., reprinted in San Diego Union Tribune, p. E2, (2/4/98)) which sank because of (closely related) metallurgical embrittlement of steel bolts and hull plates,...

Warnings, Portents, Continuing / Ongoing Disasters, and Trends are Clear / Undeniable!!!

Do Governments have the courage to ACT NOW

C:\WINDOWS\Local Settings\Temporary Internet Files\Content.IE5\WVCN0DQJ\TSURUGA 9-26-02 SS SHROUD CRACKS BUT AT W E L D S The Japan Times Online.htm

Japan Atomic Power hid cracks
Nation's oldest commercial reactor joins coverup scandal

Japan Atomic Power Co. kept running a nuclear reactor in Fukui Prefecture without reporting to the government that it had detected cracks in the core's shroud, company sources said Wednesday.

The company found signs of cracks in the shroud of the No. 1 reactor at its Tsuruga nuclear plant, along the Sea of Japan, during a voluntary inspection in 1994, the sources said. Started up in 1970, the reactor is the nation's oldest for commercial use.

It later replaced the shroud, telling the national and local governments it did so as preventive maintenance, the sources said.

A shroud is a stainless-steel cylinder made of welded plates that surrounds the core and regulates the flow of cooling water.

The disclosure follows revelations last month that Tokyo Electric Power Co. concealed on several occasions structural faults in its nuclear reactors. The government believes Tepco may have broken the law by covering up the existence of cracks and may pursue charges. If so, Japan Atomic Power may also face charges.

Japan Atomic Power officials said the company determined that it was not required to report the cracks to the government.

In a related development, Akira Matsu, parliamentary secretary for economy, trade and industry, said the government should introduce regulations to exert control over nuclear operators' "voluntary" facility checks.

"It is strange that the law does not regulate the voluntary inspections of nuclear plants," Matsu said before the Diet on behalf of the industry ministry, which oversees the Nuclear and Industrial Safety Agency. "It is very important that they come under the law."

Meanwhile, the revelation may affect the nuclear plant operator's plans to build a third and fourth reactor at the Tsuruga plant.

The Fukui Prefectural Government has given the go-ahead to the plans, but the operator has yet to clear some administrative procedures.

According to the sources, the operator began voluntary examinations of shrouds in 1991, including visual checks and the use of ultrasound detectors, in addition to the government's regular inspections, following the findings of cracks in shrouds in the United States and other countries.

In 1994 it found indications of dozens of cracks of up to 47 cm in length and 19 mm in depth near the welding area of the shroud. It repeatedly came across cracks thereafter.

The company decided that the cracks posed no safety problem and continued operating the reactor without reporting the findings to the government.

During a regular inspection that ran between August 1999 and March 2001, it replaced the shroud with one made of material believed resistant to stress corrosion cracks, calling it "preventive maintenance."

The company also assured the central and local governments that it had confirmed the "soundness" of the reactor in past inspections, without touching on the cracks that were detected, the sources said.

Launched in March 1970, the Tsuruga No. 1 boiling-water reactor, with a 357 megawatt capacity, is Japan's first light-water reactor for commercial use.

The Japan Times: Sept. 26, 2002

September 10, 2002

Japan Hit With TEPCO Scandal

By Susan Kellogg
Issues Analyst

[News item from Ridder/Tribune News Service] Three top officials of Tokyo Electric Power Co. (TEPCO), Japan's largest electric utility, resigned on Monday, Sept. 2, after finally acknowledging that the company had violated safety regulations and falsified records at three of its largest nuclear-power plants. The cover-up, which has been ongoing since the 1980s, was revealed to the public in the last few weeks by the Ministry of Economy, Trade and Industry (METI). METI had been investigating allegations from a

whistleblower report that was provided by a General Electric International Inc. (GEII) inspector in July 2000.

Analysis: The reports of the recent nuclear-power industry scandal plaguing Japanese officials eerily plays out like a timeline of the U.S. power industry of the past two years: power industry cover-up by largest industry player, whistleblower blows cover, ensuing government agency investigation, top executive resignations, major scandal that rocks stock market, betrayal of public trust, and impact on deregulation. Were the motives behind the scandal another example of corporate greed, as in the Enron washout? Or was the utility victim to another kind of hubris? Tradition as well as convenience may have been the Achilles heel that has fanned the flames of public betrayal and jeopardized the future of nuclear power and deregulation in Japan.

METI announced that it had found evidence of falsified records of cracks in three TEPCO nuclear-power plants. The public was informed that the agency had been conducting a two-year investigation spurred by a whistleblower from GEII who had been hired by the utility to inspect its nuclear reactors. The inspector had filed a report showing two 9-centimeter (3.6-inch) cracks in the middle of one reactor's core shroud, which company personnel falsified to prevent a halt to plant operations. The nuclear plant continued to operate without repairing or replacing the damaged parts.

METI was contacted by the then-anonymous GEII whistleblower in July 2000. Although the ministry affirmed it immediately and began investigating the cover-up allegations, the TEPCO facilities were allowed to continue operating. In a country that considers the safety of its nuclear reactors to be of paramount importance, this oversight seems incongruous. But as facts continue to reveal themselves, it appears that over 100 nuclear division employees may have complied with the cover-ups. In the fallout, TEPCO President Nobuya Minami, Chairman Hiroshi Araki, Executive Vice President Toshiaki Enomoto, and Advisers Gaishi Hiraiwa and Sho Nasu announced plans to resign by October.

Nuclear Powerhouse

Japan is dependent on nuclear power. With no native resources of oil or natural gas, the country turned to nuclear power to reduce its dependence on foreign oil and to comply with goals set by the Kyoto Protocol to reduce emissions. With 17 nuclear-power plants that generate about a third of the nation's electric power, Japan is the world's third-largest commercial operator of nuclear-power facilities.

As the largest utility and stronghold of the nuclear-power industry, TEPCO was both a monopoly of power and pivot of public trust. Public confidence in the state's nuclear program was severely damaged several years ago in 1999, after an accident at Tokai-Ibaraki Prefecture, a nuclear-reprocessing facility, took the lives of two employees and almost triggered a massive leak of nuclear radiation.

It has taken two years to reveal problems at nuclear plants that have been around for decades. Safety problems in at least 13 of 17 reactors at three major nuclear plants may have been concealed, said METI officials. The utility allegedly admitted that 29 falsified reports did not disclose concealed damage to the core shroud of the 13 reactors at TEPCO's Kashiwazaki-Kariwa nuclear-power plant in Niigata Prefecture and the No. 1 and No. 2 Fukushima nuclear plants in Fukushima Prefecture. The shroud is the steel cylinder of welded plates that surrounds a nuclear reactor's core. Extensive cracking of the welds that hold these plates together could make it difficult to control the speed of a nuclear reaction.

After finally acknowledging the problem, TEPCO has begun an internal probe, according to industry sources, questioning some 100 workers, including senior- and executive-level employees who worked at the plants in the 1980s and 1990s. About 30 to 40 people have already been reportedly interviewed. Of those, one former worker at the No. 1 Fukushima plant told internal investigators that in 1986 he asked the outside contractor, a GEII inspector, to falsify records when it found cracks on the shroud of the No. 2 reactor during an inspection. Another Fukushima plant worker admitted a similar deception in inspection records on the steam drier of the No. 1 reactor in 1989. TEPCO had outsourced inspections to GEII, the Japanese unit of the U.S.-based General Electric Co. In July 2000, a GEII employee finally notified the Ministry of International Trade and Industry (MITI), the predecessor of METI about the 1989 case,

prompting the nuclear-safety agency to look into the allegations.

The revelation of the decade-long deception at the three plants finally forced TEPCO officials to take notice and halt operations at five of eight reactors that are suspected of having unrepaired damage. The reactors will be closed down in succession so as to not disrupt power supplies, confirmed company officials. The Nuclear and Industrial Safety Agency, operating under METI, reportedly conducted on-the-spot inspections at the three nuclear-power plants earlier this week.

Why the Delay?

It was another case of "he said-she said." Up until the revelations sparked indignation and public outcry, TEPCO had repeatedly reported no knowledge of the cracks or other problems. MITI began questioning TEPCO about the cracks and other trouble in September 2000. When MITI officials visited the Fukushima No. 1 nuclear plant they couldn't find any problems because the company had already fixed the cracks. Another informer tip in December was a catalyst for further investigations, but it took TEPCO eight months to comply. METI stepped in and finally coordinated with GEII to get the official testimony. With GEII's cooperation, the full investigation began.

One official, Toshiaki Enomoto, former head of the Kashiwazaki-Kariwa plant and current vice president of TEPCO, admitted that he had received a damage report from GEII as plant chief during 1995-1997 that he never passed up to senior officials. "They were just informed that the tests went O.K.," reported the Kyodo News.

Japan has very stringent nuclear-plant inspection requirements. Nuclear reactors must be inspected every 13 months in Japan, compared to once every two years for U.S. and European nuclear plants. According to Kyodo News, the cover-ups were motivated chiefly by an increased need to keep up with rising electricity demand during Japan's economic boom in the 1980s and early 1990s. Maintaining power supply was the company's top priority, reported Kyodo News.

Part of the issue revolves around the team mentality of Japanese workers, analysts believe. According to TEPCO and METI interviewees, employees made the decision that there was no need to mend the damage and that the delay would not pose a danger. Cracks in nuclear-reactor shrouds are caused by decay and stress. They are usually replaced in Japan, although in the United States and Europe they are often mended, or left alone if the damage is not considered dangerous, said company sources. Stopping to make the repairs would have taken plants offline, affecting both service and expenditures. Nuclear repairs are very expensive. The cost of suspending operations for a single day at a 1-million-kilowatt nuclear reactor can reach 100 million yen (US $84,500) because electricity to customers during repair periods must be generated through thermal and other forms of power generation.

Former TEPCO President Nobuya Minami told reporters that government requirements in the nuclear-power industry were behind the "efficiency culture" that motivated the workers. Japanese nuclear plants are required to repair even the tiniest scratches, putting workers under great pressure, said Minami. Faking reports on damages and repairs was an instant solution to keep plants running, please their bosses and protect the name of the company.

Resolutions

Unlike their Enron-counterparts, Minami, Araki and other top TEPCO officials have acknowledged their responsibility for the cover-ups and announced their resignations. The severity of the cover-ups revealed that officials might have taken their oversight too lightly.

A number of recommendations have emerged from the fallout. It takes up to two years to inspect a suspicious nuclear-power plant. The Economy, Trade and Industry Ministry's Nuclear and Industrial Safety Agency is looking at amending the Electric Utilities Law to allow inspectors immediate access to nuclear plants under suspicion and raise fines for violators. Current law protected TEPCO from inspection on the premises without its permission. The ministry will revise the law so that utility companies will be required to

submit documents on internal tip-offs on problems at nuclear-power plants.

The Japanese government will also consider adjusting its policies to allow Japanese nuclear plants to continue operating damaged facilities if the damage isn't considered serious enough to cause major safety problems, the Nihon Keizai Shimbun reported. This move comes in response to criticism that the current rigorous safety standards are partly behind the falsification of TEPCO nuclear-power plant inspection records. Revised procedures would include conducting surprise inspections at nuclear-power facilities.

Another reform will be to improve the setup of the company's nuclear-power division, which has often been criticized for its closed, hands-off policies, and dubbed a "nuclear power village." It will be necessary, says newly appointed TEPCO President Tsunehisa Katsumata, to make corporate culture more transparent. The investigation was delayed by many difficulties, including TEPCO's tight ties with the bureaucratic and political establishment. Outgoing TEPCO Chairman Araki was also a vice-chairman of the powerful Keidanren business lobby, but also chairman of the Keidanren's Committee on Corporate Behavior of the Japan Business Federation, set up to address issues of business ethics and corporate governance.

Reforms aside, the damage has been done. Public trust and investor trust will be on the line in the next few months. Time will tell whether deregulation timelines and the development of nuclear-power strategies will be affected. As the U.S. power industry has been forced to revise its priorities, so may the Japanese power industry.

An archive list of

Japan Times (www.japantimes.com) Search on Nuclear Reactors:

Here are your results:
You searched for "TEPCO" (case insensitive)
And that found 97 articles.

* Unauthorized bolts used to fix Fukushima nuclear reactor
September 11, 2002

* Tepco official suspected of giving damage coverup order
September 10, 2002

* Tepco put reactors back on line despite reports of over 20 faults
September 8, 2002

* Officials at Tepco HQ 'not aware' of coverups
September 7, 2002

* City passes resolution against nuke plan
September 7, 2002

* Tepco in-house probe reveals division chiefs' coverup role
September 6, 2002

* Mitsui scandals send top brass down the ladder
September 5, 2002

* Hiranuma sorry for delay in probe of Tepco scandal
September 4, 2002

* Radiation leak shuts down Tepco reactor

September 4, 2002

* Nuclear hosts demand investigation into Tepco
September 3, 2002

* Tepco chairman, president announce resignations over nuclear coverups
September 3, 2002

* Tepco executives to quit over atomic plant scandal
September 1, 2002

* Koizumi, Hiranuma blast Tepco over alleged nuclear-hazard coverup
August 31, 2002

* Buying into the idea of saving the planet
August 25, 2002

* Mizuho pays Tepco redress of 50 million yen
August 25, 2002

* Japan Telecom-Tepco deal denied
July 31, 2002

* Tepco says it cut CO2 emissions by 5.2% in '01
July 30, 2002

* PoweredCom, IIJ in tieup talks
July 19, 2002

* Fukushima panel OKs hike in nuclear tax
July 5, 2002

* MOX fuel's return just the start for Kepco
July 5, 2002

* Fukushima rejects nuclear tax petition
June 23, 2002

* Mizuho faults known: Tokyo Gas
April 24, 2002

* Fukushima panel eyes steep hike in nuclear fuel tax
April 19, 2002

* Fukuda talks tough on Mizuho glitches
April 16, 2002

* Fiber-optic Net surfing to cost less
April 13, 2002

* Nuclear Safety Commission urges MOX fuel use
April 10, 2002

* Upper House approves new BOJ board appointees
April 6, 2002

* Tepco ready for market liberalization
April 5, 2002

* Tepco plans 7% rate cut
March 5, 2002

* Tepco may muscle in on Tohoku power turf
February 21, 2002

* Tepco enters gas market in deal with Nippon Steel
January 23, 2002

* Getting to work with words
January 16, 2002

* Niigata plant suffers radiation leak
December 21, 2001

* Power utilities go overboard with water contract
November 6, 2001

* Nuclear firms not fearful of terrorism
October 14, 2001

* Toyota stays top earner for second year running on strong sales, cost cuts
August 21, 2001

* Firms seek protection from fickle weather that swings sales
August 14, 2001

* Heat of summer ups demand for electricity, beer
August 2, 2001

* Tokai nuke incident still shows afterglow
July 12, 2001

* Japan nuclear power firms refuse to buy British MOX fuel
July 1, 2001

* Hiranuma to visit Niigata over MOX rejection
June 27, 2001

* Nonutilities slow to light up newly opened market
June 19, 2001

* Solving Asia's nuclear-waste dilemma
June 14, 2001

* Tepco puts MOX debut on hold
June 2, 2001

* Koizumi plans to boost PR after town votes no on MOX
May 29, 2001

* Niigata village says no to MOX fuel use at nuke plant
May 28, 2001

* Plebiscite on MOX fuel due May 27
May 18, 2001

* Tepco, three banks buy into Recruit
May 18, 2001

* Saitama to get cheap, fast Internet service on May 25
April 27, 2001

* TTNet plans high-speed Internet access service
April 22, 2001

* Nuclear agency approves MOX fuel for Niigata plant
April 14, 2001

* Tepco delays MOX debut due to opposition in Fukushima
March 30, 2001

* MOX fuel unloaded in Niigata
March 25, 2001

* Court rejects request to halt MOX fuel use
March 24, 2001

* British MOX freighters near port
March 15, 2001

* Concerns expressed over plutonium stocks
February 28, 2001

* Governor suspends use of MOX fuel
February 27, 2001

* Tepco says nuclear plans will remain unchanged
February 10, 2001

* Tepco to put new plants on hold
February 9, 2001

* Ships carrying nuclear fuel leave France for Japan
January 21, 2001

* Mirroring the fundamental life force
January 21, 2001

* Kariwa MOX referendum killed
January 6, 2001

* Change of mind on MOX vote
January 3, 2001

* Fukushima reactor to debut pluthermal power
December 22, 2000

* Ship loads spent nuclear fuel for journey to Rokkasho

December 16, 2000

* Letting the genie of art out of its bottle
December 16, 2000

* Enron raises power stakes with thermal plant in Aomori
November 30, 2000

* Power firms agree on telecom integration
November 11, 2000

* Tepco, trading companies invest $20 million in APX
October 12, 2000

* Taiwan shift away from reactors may deal blow to Japanese firms
October 6, 2000

* Power firms turn to Net for parts
September 29, 2000

* Tepco gets green light for MOX nuclear fuel
August 11, 2000

* Diamond Power wins MITI contract
August 11, 2000

* Group asks for injunction on Tepco's MOX fuel use
August 10, 2000

* Acquitted Nepal man to stay in jail
August 9, 2000

* MITI to ask FTC to probe Tepco over power deals
August 8, 2000

* FTC probes Tepco over questionable practices
August 6, 2000

* Pipe broken in quake caused closure of Tepco nuclear plant
August 3, 2000

* Crack found in oil duct at nuclear power plant
July 25, 2000

* Strong earthquake rocks much of eastern Japan
July 22, 2000

* Lower 6-level temblor shakes Izu Island chain
July 16, 2000

* Japan looks to cleaner sources of energy
July 3, 2000

* Nuclear fuel plant starts tests
June 30, 2000

* Tepco's net profit declines on loss
May 23, 2000

* SpeedNet boss to take blame
May 20, 2000

* Tepco, Sony plan unit to sell solar, wind power
April 27, 2000

* Pioneer TTNet seeks power alliance
April 3, 2000

* Tepco cuts capital outlay 17% for 2000
March 30, 2000

* Power industry to get a jolt of competition
March 21, 2000

* Two die in ASDF jet crash; power cut to 800,000
November 22, 1999

* Storm-delayed MOX ship docks amid tight security
September 27, 1999

* Japan grabs for promise of MOX
September 22, 1999

* High waves hamper MOX fuel delivery
September 22, 1999

* Nuclear utilities' Y2K assurances difficult to sell
September 17, 1999

* Fukui OKs use of MOX fuel at Takahama plant
June 17, 1999

* Tepco investors lose lawsuit over atomic reactor
March 25, 1999

* U.S. shown plan to ship MOX fuel unescorted from overseas
January 29, 1999

Qualifications:

Dr. Edward Siegel

Metallurgist / Physicist / Whistleblower

messages: c/o (858) 270-5111

(best: A. M. & Nights - 7 days- PACIFIC-time - NO-voicemail; NO-call-waiting; often dialup-online)

tat@tnl-online.com

Seeking

Creative challenging position in alloy metallurgy/NDT/ceramics/materials/process engineering/ utilizing my diverse heuristic skills: problem-solving, incisive analysis, and optimization, reasoning with: ambiguity, uncertainty, analogy, induction, deduction, via insightful disambiguation for decisive implementation with applications in: metallurgy/NDT/ materials/process-engineering: failure-analysis, troubleshooting, yield-enhancement, reliability, testing, QC, QA in both fab/R.& D. environments.

Skills-Set and Accomplishments

· Initiating Failure-Analysis of: utility power-plants (nuclear and fossil), pipelines: gas, water, naptha, hydrogen,....

· Implementing Yield-Enhancement of: utility power-plants (nuclear and fossil), pipelines: gas, water, naptha, hydrogen,....

· Troubleshooting of development and fab process bottlenecks; in-process testing during fabrication.

· Consulting within organizations on materials/process-specific problems in development and fabrication processes.

· Developing real-time Q.A. and interactive Q.C. during processing for process yield-optimization.

· Managing international-programs including: planning, reporting, staffing, vendor-liaison, foreign-government liaison, consulting, troubleshooting, failure-analysis, yield-enhancement, Q.C., Q.A., databases,..., in both fab, and R.& D.

· Consulting/Troubleshooting/Qualifying ferrous/nonferrous alloys in high stress and/or high corrosion environments fabrication techniques and quality parameters

· Qualifying selection of optimum materials of construction/fabrication practices for commodity items to maximize cost effectiveness

· Determining cause and required remedial action for metallurgical failures in electrical/gas distribution/ transmission components: pipelines, valves, pumps, rotating/reciprocating equipment: compressors, structural facilities, pressure vessels,...

· Anticipating potential alloy metallurgy problems: corrosion, stress corrosion cracking, fracture, hydrogen embrittlement, hydrogen sulfide cracking, brittle failure, plastic collapse, cyclic fatigue, corrosion fatigue failures.

· Managed/Directed failure analysis of electricity/gas generating/transmission equipment/tools

· Qualified/Monitored/Recommended Changes to existing: weld-alloys, welding-procedures, welder-qualification practices, industry codes/methods

· Provided support to operations: maintainance/engineering/design/fabrication/construction firms on large capital intensive generation/transmission plants/facilities

· Developed/Qualified alloy processing: welding, machining, forging, casting, powder-metallurgy: ball-milling, hot pressing, cold isostatic pressing, sintering, consolidation...

· Managed/Performed: failure analysis of failure mechanisms corrosion, environmental cracking, fatigue, brittle failure, plastic collapse,...

· Analyzed/Managed/Selected appropriate analysis methods: fracture mechanics, metallography, macrophotography, SEM, EDAX, mechanical testing, NDT (especially acoustic-emission, ultrasonics)

· Developed/Managed/Implemented testing/inspection methodology: component analysis methods, destructive and non-destructive testing (radiography, acoustic-emission, ultrasonics, magnetic particle, dye penetrant,...

· Developed/Managed/Implemented/Mitigated corrosion: testing, prevention, mitigation engineering via corrosion resistant fab/construction materials: metallic/ceramic/polymer/composite/cermet coatings for corrosion, stress corrosion cracking, hydrogen embrittlement, hydrogen sulfide cracking, corrosion fatigue deceleration/prevention

· Analyzed/Managed/Selected/Assessed fracture mechanics: Charpy V-notch/ CTOD testing, brittle failure prevention, plastic collapse failure criteria, corrosion-damage, mechanical-damage,..., especially superalloy (INCO-182/82), HASTELLOY-X,... magnetic-testing discovery/calibration and heat-treatment reversal

· Managed international transnational ANSI, API, NACE, codes/standards compliance.

Experience

· ENTREPRENEURIAL new-ventures/start-ups and CONSULTANT
[Silicon Valley, CA.: Dysan, Memorex, I.B.M., Systron-Donner,..., MA: Trillenium, and E.C. (Italy & Vienna): I.A.E.A./I.C.T.P., OPEC, Petrobras, A. G. A., Proton-Diamant, Excalibur, Eureka, and in former Eastern Bloc,]:

· "Digit-counting" QA/QC/Auditing on-average statistical inter-digit correlations logarithmic-law ["fraud detection"] inversion and expansion to reveal its/digits' hidden quantum-physics with extensive applications to: auditing, Q.C., Q.A., accounting, fraud-detection, systematic-bias error-detection, digital-computing correction, quantum-computing implementations, software-packages,...
[popular refs: M. Browne, N.Y.T. (8/4/98)-front page/Science section; T. Hill, Am. Sci. (7-8/98); R. Mathews, New Sci (7/10/99)]

· "Fuzzyics" & "Rough-Stoffe" Fuzzy-Logic & Rough-Sets Artificial-Intelligence packages.

· "Static-Synergetics": real-time/during processing Q.A. and interactive Q.C. for yield-enhancement optimization.

· Proton-Diamant: Proton-in-Diamond optimal heat-sink ion-implantation/diffusion interconnects.

· Solar-Hydrogen-Water: solar-energy production of water via hydrogen/hydride-storage and gravity.

· "ThermAlloy-Technology"(TAT):Ni-based superalloys/Fe-based stainless-steels thermal overageing-embrittlement catastrophic-failure preclusion via magnetic-N.D.T. real-time Q.A./alloy-rejuvenation heat-treatment Q.C.for forced-outage/maintenance/accident minimization process

yield-optimization.

· "Excalibur": earthquake sub-Hertz sub-audio infra-sonic/electromagnetic early-warning alarm sensors.

· "Eureka"/"Shazam": Neural-Network Automatic Optimization via "Fuzzyics" & "Rough-Stoffe" A.-I.

· "Bucky-Ball" Fullerine/Fulleride versus Cuprate versus Magnesium Diboride High-Temperature Superconductivity enhancement.

· Bioelectronic nerve pain-analgesia, cardiology-therapy, DNA-control by 1/f-noise nonlinear-dynamics

Experience

· NDT SENSOR/DETECTOR PHYSICIST/ENGINEER National Research Council, Space Agency, São Paulo, BRAZIL

· ALLOY METALLURGY NDT CONSULTANT, Petrobras, São Paulo, BRAZIL

· NDT SENSOR/ DETECTOR PHYSICIST/ENGINEER, Queen Mary College, University of London, UK

· POLYMER-ALLOY-CERAMICS ELECTROCHEMIST, Molecular Energy Research Co, Westwood, NJ

· NUCLEAR ALLOYS/CERAMICS CONSULTANT, International Atomic Energy Agency, INDONESIA/ AUSTRIA.

· MANAGER: METALLURGY, MATERIALS, NDT, QC, QA, Public Service Electric & Gas. Co., Newark, NJ

· SENIOR ALLOY METALLURGIST, WAPD/WNES, Westinghouse Atomic-Power/Nuclear Energy Systems., Pittsburgh, PA

· SENIOR ALLOY METALLURGIST, General Motors Technical Center, Manufacturing Development, Warren, MI

· ALLOY METALLURGICAL ENGINEER Ford Motor Company Scientific Research Staff, Dearborn, MI.

· ALLOY METALLURGICAL ENGINEER Weston Instruments Div.of Schlumberger, Newark, NJ

· ALLOY PLASMA-SPRAY COATINGS ENGINEER Dewey Space Physics Laboratory, NY, NY

· ALLOY METALLURGICAL ENGINEER/FAB MANAGER Silicon Transistor Corp., Carle Place, NY

· CERAMICS/COMPOSITE/ALLOYS ENGINEER US Army Materials Research Agency, Watertown, MA

Education

· DOCTOR OF ENGINEERING Michigan State University, East Lansing, MI Metallurgy

· MASTER OF SCIENCE University of Michigan, Ann Arbor, MI. Physics.

[attended: University of Pennsylvania Materials-Science/Metallurgy; New York University, Physics]

· BACHELOR OF SCIENCE City College of New York (C.C.N.Y.), NY,NY, Physics.

[attended: Colorado School of Mines, Golden, CO Metallurgy, Mineralogy, Geophysics]

"tha, tha,... that's (N O T) all folks"