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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SECRETARY

April 8, 2004

COMMISSION VOTING RECORD

DECISION ITEM: SECY-04-0046

TITLE: FISCAL YEAR 2003 REPORT TO CONGRESS ON ABNORMAL OCCURRENCES

The Commission (with all Commissioners agreeing) approved the subject paper as recorded in the Staff Requirements Memorandum (SRM) of April 8, 2004.

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Commission.

J. Schmidt Walker for
Annette L. Vietti-Cook
Secretary of the Commission

Attachments:
1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Diaz
Commissioner McGaffigan
Commissioner Merrifield
OGC
EDO
PDR

VOTING SUMMARY - SECY-04-0046

RECORDED VOTES

	APRVD	DISAPRVD	ABSTAIN	NOT PARTICIP	COMMENTS	DATE
CHRM. DIAZ	X				X	3/30/04
COMR. McGAFFIGAN	X				X	3/23/04
COMR. MERRIFIELD	X				X	4/7/04

COMMENT RESOLUTION

In their vote sheets, all Commissioners approved the staff's recommendation and provided some additional comments. Subsequently, the comments of the Commission were incorporated into the guidance to staff as reflected in the SRM issued on April 8, 2004.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: CHAIRMAN DIAZ

SUBJECT: **SECY-04-0046 - FISCAL YEAR 2003 REPORT TO CONGRESS ON ABNORMAL OCCURRENCES**

Approved x w/edits Disapproved _____ Abstain _____

Not Participating _____

COMMENTS:

Approved, subject to attached edits and concur with Commissioner McGaffigan's comments.

SIGNATURE

3.30.04

DATE

Entered on "STARS" Yes ✓ No ___

ABSTRACT

Section 208 of the Energy Reorganization Act of 1974 (Public Law 93-438) defines an abnormal occurrence (AO) as an unscheduled incident or event which the U.S. Nuclear Regulatory Commission (NRC) determines to be significant from the standpoint of public health or safety. The Federal Reports Elimination and Sunset Act of 1995 (Public Law 104-66) requires that AOs be reported to Congress annually. This report describes those events which have been determined to constitute AOs by the NRC during Fiscal Year 2003.

The report describes five medical events at facilities licensed by the NRC. Three events involved patients undergoing therapeutic brachytherapy treatments, one event involved an unintentional therapeutic dose of sodium iodide (I-131) to an embryo/fetus, and one event involved a diagnostic overexposure of a minor. The report also discusses nine AOs at facilities licensed by Agreement States. Agreement States are those states which have entered into a formal agreement with the NRC pursuant to Section 274 of the Atomic Energy Act (AEA) to regulate certain quantities of AEA material at facilities located within their borders. Currently, there are 33 Agreement States. Seven events were medical events (five therapeutic and two diagnostic), one event involved overexposure to a radiographer, and one event involved overexposure to members of the public from a damaged gauge. Appendix A to this report presents the criteria for selecting AOs and the guidelines for selecting "Other Events of Interest". Appendix B, "Update of Previously Reported Abnormal Occurrences," gives updates on previously reported AOs and an event of interest. Appendix C, "Other Events of Interest", describes three nuclear power reactor events and one materials event.

Agreement State

Nature and Probable Consequences — On August 8, 2003, the Community Hospital of Anderson reported that a 35-year-old female patient was administered 1.1 GBq (29.8 mCi) of sodium iodide-131 (I-131) for the treatment of hyperthyroidism. At the time of the therapy, the patient was unaware that she was pregnant and, as a result, an unintentional dose to her embryo/fetus was delivered. On August 25, 2003, the patient's gynecologist informed the hospital and the patient that she was approximately 15 weeks pregnant at the time of the therapy.

The NRC staff contracted with a medical consultant to review the possible deterministic effects of the dose to the embryo/fetus as a result of the event. The medical report indicated that the total effective dose equivalent (whole body) to the embryo/fetus was approximately 7.4 cGy (rads) and the committed dose equivalent to the embryo/fetal thyroid was approximately 27,814 cGy (27,814 rads). The NRC medical consultant ~~contracted to review this event,~~ also anticipated that the fetal thyroid would be ablated. The licensee anticipated that the fetal thyroid would be ablated.

Cause or Causes — The event appeared to be an isolated occurrence. The root cause of the event was determined to be human error. Although the authorized physician user and the chief technologist asked the patient on several occasions, prior to the administration of the I-131 dosage, if she was pregnant or believed that she could possibly be pregnant, the patient denied the possibility of pregnancy. Due to other preexisting medical conditions and consultations by other physicians informing the patient that she was unable to conceive, the patient believed that she could not become pregnant and declined taking a pregnancy test prior to the I-131 therapy. Further, the hospital staff, knowing that the patient was also a physician on staff at the hospital, did not pursue a pregnancy test because they believed that the patient was aware of her pregnancy status.

Actions Taken To Prevent Recurrence

Licensee — The licensee conducted a thorough investigation of the event, including identification of the root cause. The root cause of the event was identified as human error by the patient. The event appeared to be an isolated occurrence. No further actions were deemed necessary to prevent recurrence.

NRC — The NRC conducted an inspection on August 26 and 27, 2003, with continued in-office review through September 30, 2003. The inspectors determined that the licensee made the required notifications to the patient, referring physician, and the NRC. No violations of NRC requirements were identified.

This event is closed for the purpose of this report.

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03-03 IVB Medical Event at Washington Hospital Center in Washington, D.C.

Criterion IV, "For Medical Licensees," of Appendix A to this report states, in part, that a medical event that results in a dose that is (1) equal to or greater than 1 Gy (100 rads) to a major portion of the bone marrow, to the lens of the eye, or to the gonads or (2) equal to or greater

Notice of Violation

NRC — On August 29, 2003, a (NOV) was issued for a violation that included the failure to order the correct quantity of I-131 as directed by the authorized user, to have a written directive dated and signed by an authorized user prior to the administration of the 15.6 MBq (421 μCi) I-131 dosage, and to administer a dosage within 20% of the prescribed dosage range for a thyroid uptake study using I-131. X

This event is considered closed for the purpose of this report.

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"STC Alert" describing the incident to all STC logging facilities in the United States, (3) implementing a planned modification to the licensee's training program to provide more detailed and graphic information regarding potential injuries to individuals that could occur if logging sources are not adequately secured, and (4) implementing a planned modification to the licensee's training program to include additional emphasis on the legal responsibilities of employees and managers and the potential penalties for individuals who violate company procedures.

Region IV conducted a prompt followup inspection in May 2002, but deferred further action pending the results of dose assessments, including cytogenetic studies of certain individuals who were believed to have received the highest radiation doses. On September 4, 2002, when preliminary results of cytogenetic studies indicated the potential for one individual to have received a radiation dose on the order of 2 Sv (200 rem), an Augmented Inspection Team (AIT) was chartered to review the incident, including dose estimates.

Based on an extensive review of the circumstances of the event and additional cytogenetic studies, the AIT concluded that if the postulated 2 Sv (200 rem) radiation dose of one individual was valid, it was not associated with this event. However, the AIT concluded that the loss of control of the source resulted in an unintended radiation dose to 31 members of the public, 13 of whom were estimated to have received a dose above NRC's annual dose limit of 1 mSv (100 mrem) for a member of the public, with the highest radiation dose estimated at 4 mSv (400 mrem). The AIT also determined that inclement weather on the second day of the incident prevented workers from receiving higher radiation doses.

Notice of Violation

On October 14, 2003, the NRC issued a (NOV) and Proposed Imposition of Civil Penalties in the amount of $90,000 to STC for the violations of NRC regulations that caused the radiation exposures to members of the public. The licensee paid the proposed civil penalty and provided NRC with a summary of corrective actions which was reviewed by the NRC and deemed to be adequate. Additionally, NOVs were issued to two individuals previously employed by STC whose actions contributed to the event.

X

This event is considered closed for the purpose of this report.

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expected; if they appeared to cause the power outage or contributed to the spread of the outage; and if all applicable safety requirements were met. The NWG coordinated their investigation with the other two working groups.

On November 2003, the Joint Power System Outage Task Force issued "Interim Report: Causes of the August 14th Blackout in the United States and Canada". In the report, the NWG concludes the following: all the nuclear plants that shut down or disconnected from the grid responded automatically to grid conditions; all the nuclear plants responded in a manner consistent with the plants' designs; safety functions were effectively accomplished and the nuclear plants that tripped were maintained in a safe shutdown condition until their restart; the NPPs did not trigger the power system outage or inappropriately contribute to its spread (i.e., to an extent beyond the normal tripping of the plant at expected conditions). Rather, they responded as anticipated in order to protect equipment and systems from the grid disturbances.

The severity of the grid transient caused generators, turbines, or reactor systems at the plants to reach a protective feature limit and actuate a plant shutdown. NWG received no information that points to the control room operators deliberately taking action to isolate NPPs from instabilities on the grid. In short, only automatic separation of nuclear units occurred.

Regarding the 95 other licensed commercial NPPs in the United States that did not experience rapid shutdowns, 4 were already shut down at the time of the power outage, one of which experienced a grid disturbance; 70 operating plants observed some level of grid disturbance but accommodated the disturbance and remained on line, supplying power to the grid; and 21 operating plants did not experience any grid disturbance.

This event is closed for the purpose of this report.

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2. Potential Clogging of Emergency Sump at Davis-Besse Due to Debris in Containment

The following event did not meet the AO criteria since it did not involve a serious degradation in the reactor coolant system boundary at the involved plant or a major reduction in the protection of public health or safety

In September 2002, with the Davis-Besse reactor defueled and in an extended outage, the licensee determined that had a design-basis loss-of-coolant accident (LOCA) occurred when the plant was operating, the existing amount of unqualified coatings (paint) and other debris inside containment could have potentially blocked the emergency sump intake screen, degrading the ability of the sump to act as a sufficient water source for the emergency-core-cooling-system (ECCS) and containment spray (CS) system. This could occur during the recirculation phase of a LOCA.

After the injection phase of ECCS in response to a LOCA where cooling water from a storage tank has been injected into the reactor vessel, the emergency sump is designed to provide the source of the spilled reactor coolant to the ECCS and the CS systems (recirculation phase). During the recirculation phase, the function of the ECCS is to remove heat from the nuclear fuel by recirculating the spilled reactor coolant back to the reactor vessel. The CS system is

The NRC has conducted a thorough review of the modifications, and concluded that the modifications will correct the deficiencies identified by the licensee.

The NRC has issued a bulletin (2003-001) to all pressurized water reactor owners to address generic implications. The bulletin requests that all affected licensees evaluate the conditions that could exist inside containment after a loss-of-coolant accident that could potentially affect safe operation, specifically the operability of the emergency sump and inform the Commission of what was found.

On October 2, 2003, the NRC issued a Notice of Violation (NOV) for ~~a violation involving~~ the failure to implement corrective actions for design control issues.

This event is closed for the purpose of this report.

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3. Salem Unit 1 Spent Fuel Pool Leak

This event is included in this report because the issue has been the subject of inquiries from members of Congress and numerous other external stakeholders. The event was the subject of a briefing with a staff member from U.S. Senator Tom Carper's office on October 24, 2003. There has also been local media coverage of this event.

On September 18, 2002, Public Service Electric & Gas (PSEG), a reactor licensee in Hancocks Bridge, New Jersey, identified low-level personnel shoe contamination on personnel attempting to exit the Salem Unit 1 Auxiliary Building, a radiologically controlled area. The licensee initiated an investigation to determine the cause of the contamination. The investigation identified that a leak containing radioactive contaminated water, due to blocked drains under the spent fuel pool, had caused the personnel contamination. On November 20, 2002, PSEG informed the NRC that tritium activity had been detected in the ground adjacent to the Fuel Handling Building, which enclosed the spent fuel pool.

In early December 2002, NRC initiated an evaluation of PSEG's actions to characterize the leakage and its potential impact on workers, the public, and the environment. NRC regional management also conducted an onsite review and discussed the matter with PSEG management during a site visit. Inspection activities were coordinated with the State of New Jersey Department of Environmental Protection (NJDEP).

Additionally, NRC conducted a special team inspection at the Salem Unit 1 facility during the period June - August 2003. The special inspection team assessed potential impact on workers, the public, and the fuel pool structure. The team also evaluated potential generic implications. The inspectors did not identify any radiological dose consequences for workers or the public, or any adverse impact on the spent fuel pool structure. NJDEP representatives accompanied the inspectors during portions of the special inspection and were kept informed of ongoing activities. No onsite or offsite dose consequences or violations of NRC effluent release limits were identified. The NRC confirmed that PSEG initiated appropriate actions to determine the source of the contamination, assess the potential for offsite release, evaluate the radiological significance to onsite workers and members of the public, and prevent further contamination of the affected area. Although PSEG took appropriate actions once the leakage was identified, the NRC determined that PSEG was not effective in recognizing early conditions that were

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

CHAIRMAN

The Honorable Richard B. Cheney
President of the United States Senate
Washington, D.C. 20510

Dear Mr. President:

I am forwarding the NRC's "Report to Congress on Abnormal Occurrences, Fiscal Year 2003." This report on events involving radioactive materials use is required by Section 208 of the Energy Reorganization Act of 1974 (ERA) [Public Law 93-438]. In the context of the ERA, an abnormal occurrence (AO) is an unscheduled incident or event that the Commission determines to be significant from the standpoint of public health or safety. The Federal Reports Elimination and Sunset Act of 1995 (Public Law 104-66) requires that AOs be reported to Congress annually.

The report describes five medical events (previously termed misadministrations) at facilities licensed by the NRC. Three events involved patients undergoing therapeutic brachytherapy treatments, one event involved an unintentional therapeutic dose of sodium iodide to an embryo/fetus, and one event involved a diagnostic overexposure to a minor. The report also discusses nine AOs at facilities licensed by Agreement States. Seven events are medical events (five therapeutic and two diagnostic), one event involved overexposure to a radiographer and one event involved overexposure to members of the public from a damaged gauge.

X of these

The report also gives updates on two events initially reported in the fiscal year (FY) 2002 annual report to Congress. The first update addresses the degradation of the reactor pressure vessel head at the Davis-Besse Nuclear Power Station. Davis-Besse has been shut down since the March 2002 discovery of the reactor vessel head degradation and will not be allowed to restart until the NRC has completed a thorough review to ensure that safety will be maintained.. The second update describes inspection and enforcement actions undertaken after an unplanned radiological exposure of oil rig workers.

Update with current status.

Agreement States are those States that have entered into a formal agreement with the NRC pursuant to Section 274 of the Atomic Energy Act (AEA) to regulate certain quantities of AEA licensed material at facilities located within their borders.

Sincerely,

Nils J. Diaz

Enclosure: "Report to Congress on Abnormal Occurrences, Fiscal Year 2003"

Attachment 2

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

CHAIRMAN

The Honorable J. Dennis Hastert
Speaker of the United States
House of Representatives
Washington, D.C. 20515

Dear Mr. Speaker:

I am forwarding the NRC's "Report to Congress on Abnormal Occurrences, Fiscal Year 2003." This report on events involving radioactive materials use is required by Section 208 of the Energy Reorganization Act of 1974 (ERA) [Public Law 93-438]. In the context of the ERA, an abnormal occurrence (AO) is an unscheduled incident or event that the Commission determines to be significant from the standpoint of public health or safety. The Federal Reports Elimination and Sunset Act of 1995 (Public Law 104-66) requires that AOs be reported to Congress annually.

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x of these

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Update with current status.

Agreement States are those States that have entered into a formal agreement with the NRC pursuant to Section 274 of the Atomic Energy Act (AEA) to regulate certain quantities of AEA licensed material at facilities located within their borders.

Sincerely,

Nils J. Diaz

Enclosure: "Report to Congress on Abnormal Occurrences, Fiscal Year 2003"

Attachment 3

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER MCGAFFIGAN

SUBJECT: **SECY-04-0046 - FISCAL YEAR 2003 REPORT TO CONGRESS ON ABNORMAL OCCURRENCES**

Approved X w/comment Disapproved _____ Abstain _____

Not Participating _____

COMMENTS:

See attached comments.

Edward McGaffigan

SIGNATURE

March 23, 2004

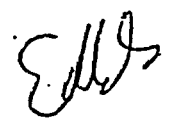
DATE

Entered on "STARS" Yes X No ___

Commissioner McGaffigan's Comments on SECY-04-0046

I approve the contents of the proposed Abnormal Occurrences report for FY 2003 subject to several minor edits (attached). In addition, the information contained in Appendix B, Item 1 regarding the status of activities at Davis-Besse should be updated. The report currently reports information as of January 15, 2004 and considering the attention focused on this plant, the status should contain more current information.

I also approve the proposed letters forwarding the report to Congress subject to the same comment that the information on Davis-Besse be updated.



than 10 Gy (1,000 rads) to any other organ and represents a prescribed dose or dosage that is delivered to the wrong treatment site will be considered for reporting as an AO.

Date and Place — May 6, 2003; Washington Hospital Center, Washington, D.C.

Nature and Probable Consequences — A patient undergoing IVB treatment of two areas within the right coronary artery for the treatment of restenosis was prescribed a dose of 23 Gy (2,300 rads) to each treatment site. Some difficulty was experienced in inserting the catheter to the first treatment site, but in the judgment of the treatment team, the catheter appeared to be inserted properly. Fluoroscopy was used to guide insertion and to position the source train. Upon completion of the first treatment, the catheter was moved to the second treatment position, as planned. When the source train was sent out for the second treatment, resistance was met and this time the catheter was replaced. The second treatment was successfully given.

In documenting the treatment, the licensee reviewed the films taken during the treatment and printed a copy of the films for the patient's record. During this documentation, the medical physicist noted that the source markers were not in the right position and suspected that the treatment area was not covered for the first treatment given. The radiation oncologist and interventional cardiologist reviewed the films and determined that the source train was approximately 40 millimeters (mm) (1.6 in) ~~proximal to~~ away from the intended treatment site.

The NRC contracted a medical consultant to review the medical event and assess the probable deterministic effects of the treatment to the wrong area of the patient's coronary artery. The medical consultant concluded that the dose to the normal segment of the right coronary artery reported in this case was well below the tolerance dose for coronary arteries and no effect was expected other than fibrosis of the right coronary artery vessel wall.

Cause or Causes — This medical event was caused by human error, in that the licensee did not properly visualize the placement of the source train due, in part, to a lapse (this refers to a lapse in time) in the fluoroscopy performed during the treatment and the inherent inability to differentiate between the proximal and distal markers of the source train. In addition, a kink in the catheter may have prevented the source train from traversing to the correct area of the right coronary artery.

Actions Taken To Prevent Recurrence

Licensee — The licensee immediately implemented measures to further enhance source positioning verification prior to initiation of future treatments. The measures included verification of fluoroscope calibration, reinstruction of the treatment team to fully appreciate the movement of both ends of the source train at the site prior to treatment, and the recommendation that the device manufacturer redesign the proximal and distal markers to make them more radiographically distinct from each other and the guiding catheter marker.

NRC — No violations of NRC requirements were identified. The NRC issued Information Notice 2003-09 describing medical events resulting from source positioning errors and is in the process of reviewing all events related to IVB since inception of this technology.

This event is closed for the purpose of this report.

Nature and Probable Consequences — On August 8, 2003, the Community Hospital of Anderson reported that a 35-year-old female patient was administered 1.1 GBq (29.8 mCi) of sodium iodide-131 (I-131) for the treatment of hyperthyroidism. At the time of the therapy, the patient was unaware that she was pregnant and, as a result, an unintentional dose to her embryo/fetus was delivered. On August 25, 2003, the patient's gynecologist informed the hospital and the patient that she was approximately 15 weeks pregnant at the time of the therapy.

The NRC staff contracted with a medical consultant to review the possible deterministic effects of the dose to the embryo/fetus as a result of the event. The medical report indicated that the total effective dose equivalent (whole body) to the embryo/fetus was approximately 7.4 cGy (rads) and the committed dose equivalent to the embryo/fetal thyroid was approximately 27,814 cGy (27,814 rads). The NRC medical consultant, contracted to review this event, also anticipated that the fetal thyroid would be ablated. The licensee anticipated that the fetal thyroid would be ablated.

Cause or Causes — The event appeared to be an isolated occurrence. The root cause of the event was determined to be human error. Although the authorized physician user and the chief technologist asked the patient on several occasions, prior to the administration of the I-131 dosage, if she was pregnant or believed that she could possibly be pregnant, the patient denied the possibility of pregnancy. Due to other preexisting medical conditions and consultations by other physicians informing the patient that she was unable to conceive, the patient believed that she could not become pregnant and declined taking a pregnancy test prior to the I-131 therapy. Further, the hospital staff, knowing that the patient was also a physician on staff at the hospital, did not pursue a pregnancy test because they believed that the patient was aware of her pregnancy status.

Actions Taken To Prevent Recurrence

Licensee — The licensee conducted a thorough investigation of the event, including identification of the root cause. The root cause of the event was identified as human error by the patient. The event appeared to be an isolated occurrence. No further actions were deemed necessary to prevent recurrence.

NRC — The NRC conducted an inspection on August 26 and 27, 2003, with continued in-office review through September 30, 2003. The inspectors determined that the licensee made the required notifications to the patient, referring physician, and the NRC. No violations of NRC requirements were identified.

This event is closed for the purpose of this report.

****

03-03 IVB Medical Event at Washington Hospital Center in Washington, D.C.

Criterion IV, "For Medical Licensees," of Appendix A to this report states, in part, that a medical event that results in a dose that is (1) equal to or greater than 1 Gy (100 rads) to a major portion of the bone marrow, to the lens of the eye, or to the gonads or (2) equal to or greater

assuring reactor pressure vessel head integrity in order to identify and recommend areas for improvement that may be applicable to either the NRC or the nuclear industry. The LLTF completed its evaluation and its conclusions were reviewed by a Senior Management Review Team to determine appropriate agency actions. The recommendations of the Senior Management Review Team were issued November 26, 2002. A Commission meeting was held on January 14, 2003, to brief the Commission on the Senior Management Review Team recommendations. The Commission approved proceeding with the recommendations. NRC implementation of the recommendations is ongoing.

The U.S. Department of Justice (DOJ) is currently reviewing this case. The NRC will consider enforcement options after DOJ has completed its review.

This event is considered closed for the purpose of this report.

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2. Unplanned Radiological Exposure of Oil Rig Workers in Montana From Radioactive Materials Associated With Well Logging Operations (previously reported as "Other Event of Interest," No. 8, in NUREG-0090, Volume 25).

Date and Place — May 21 and May 23, 2002, Schlumberger Technology near Havre, Montana.

Background — On May 23, 2002, Schlumberger Technology Corporation (STC [the licensee]) notified the NRC's Operations Center of the temporary loss of control of a well logging source containing approximately 44 GBq (1.2 Ci) of Cs-137. The licensee reported that following well logging operations on May 21, 2002, near Havre, Montana, the well logging crew failed to transfer the sealed source from the well logging tool to its shielded transport container. As a result, the source was left unshielded on the rig floor for approximately 2 days, exposing 31 rig workers to radiation from the unshielded source. The rig workers are considered to be members of the public, and not radiation workers, because they are not exposed to radiation from licensed radioactive material as a normal part of their work.

In a written report of the incident dated June 25, 2002, the licensee stated that its three-person well logging crew had failed to conduct two required independent radiation surveys to ensure that the Cs-137 source was in its shielded container before the crew left the job site in Havre, Montana. The crew's failure to return the source to its shielded container and failure to conduct the surveys resulted in the Cs-137 source being left unshielded on a portable drilling rig for more than 2 days. Consequently, 31 rig workers who were not radiation workers received radiation exposure from the unshielded source. The licensee's initial estimates for the doses ranged from less than 10 mSv (1 rem) to as high as 64 mSv (6.4 rem). This included 10 workers between 20 mSv and 64 mSv (2 and 6.4 rem; respectively), 15 workers between 10 mSv and 20 mSv (1 rem and 2 rem, respectively), and six individuals less than 10 mSv (1 rem).

Actions Taken To Prevent Recurrence

The licensee's corrective actions for this event included (1) terminating the employment of the individuals deemed responsible for the loss of control of the Cs-137 source; (2) sending an

APPENDIX B

UPDATE OF PREVIOUSLY REPORTED ABNORMAL OCCURRENCES

During this reporting period, there was significant new information regarding two abnormal occurrences previously reported in the FY 2002 Report to Congress on Abnormal Occurrences.

NUCLEAR POWER PLANTS

1. Performance Deficiency Resulting in Reactor Vessel Head Degradation at Davis-Besse Nuclear Power Station in Oak Harbor, Ohio (previously reported as AO 02-1 in NUREG-0900, Volume 25).

Date and Place — March 6, 2002; Davis-Besse Nuclear Power Station, Oak Harbor, Ohio.

Background — On March 6, 2002, licensee personnel at the Davis-Besse Nuclear Power Station, a pressurized-water reactor plant designed by Babcock and Wilcox Company, operated by First Energy Nuclear Operating Company, and located near Oak Harbor, Ohio, discovered an area of significant degradation of the reactor vessel head in the vicinity of one of the vessel head penetrations. The full details of the event are discussed in the FY 2002 abnormal occurrence report as Event 02-1. At the time that report was issued, the event was listed as open.

Update on Actions Taken To Prevent Recurrence

Since the identification of the reactor vessel head degradation at Davis-Besse, the plant has been shut down. Davis-Besse has implemented a comprehensive return-to-service plan that includes detailed reviews of systems both inside and outside of the containment and all systems subject to potential boric acid corrosion.

The licensee has also addressed deficiencies that it identified in its safety conscious work environment and safety culture. Many senior managers were replaced, and the licensee contracted with an independent consultant to evaluate what actions the licensee needed to take to address the issues. The licensee continues to implement corrective actions to address the previously identified concerns with its safety conscious work environment and safety culture.

The NRC placed Davis-Besse under Inspection Manual Chapter 0350, "Oversight of Operating Reactor Facilities in a Shutdown Condition With Performance Problems," on April 29, 2002. The NRC developed a Restart Checklist, which contains the issues identified by the Oversight Panel which need to be resolved before a restart decision can be made. The NRC staff continues to monitor the licensee's efforts to ensure activities planned to be completed to correct the previously-identified deficiencies in plant and human performance are effectively implemented. However, restart will not be considered until all items on the Restart Checklist are satisfactorily resolved. As of January 15, 2004, 24 of 31 items had been resolved. Further inspections and assessment of Davis-Besse performance will be performed before plant restart is considered. The NRC also chartered a Lessons Learned Task Force (LLTF). The objective of this task force was to independently evaluate the NRC's regulatory processes related to

should be updated.

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: COMMISSIONER MERRIFIELD

SUBJECT: **SECY-04-0046 - FISCAL YEAR 2003 REPORT TO CONGRESS ON ABNORMAL OCCURRENCES**

Approved ✓ Disapproved _____ Abstain _____

Not Participating _____

COMMENTS:

See attached comments.

SIGNATURE

4/7/04

DATE

Entered on "STARS" Yes X No ___

Comments from Commissioner Merrifield on SECY-04-0046:

I approve the staff's recommendations and letters to Congress for SECY-04-0046 (FY 2003 Abnormal Occurrences report to Congress) as revised by both the Chairman and Commissioner McGaffigan with further revisions discussed in the following paragraphs. First, let me state that for the revisions discussed below, the staff wording is technically correct; but it is not correct for the intended audience, namely members of Congress and their general staff. To properly read some of the report requires a level of technical understanding and discipline beyond what is appropriate. Resolution of this problem is relatively simple for this report and is something the staff should continue to appropriately focus for future reports. Specifically, there are two generic problems located primarily in the sections titled "Nature and Probable Consequences". In each area, I will provide some specific examples of my concern, but I expect staff to go through the entire report and correct similar deficiencies.

The first problem is lack of consistency in reporting radioactive quantities. An example of the standard methodology used by the NRC is 1 gray (100 rads). The staff uses this standard methodology except for some medical applications. These medical applications use the centigray (cGy) or centisievert (cSv) terminology. With no explanation, the staff terminology changes to values such as 13 cGy (rads) or 31.4 cSv (rem). Unless one is technically aware that 1 cGy equals 1 rad or 1 cSv equals 1 rem, the change in terminology can be confusing. Staff should go through the report and use a consistent methodology throughout -- i.e. 13 cGy (13 rads) or 31.4 cSv (31.4 rem). Other than for particular aspects of the medical community, the terms cSv and cGy are not commonly used terms and we should not expect other disciplines to be familiar with the use of these terms.

The second problem involves switching nomenclature in the middle of a sentence where staff is comparing two values. For example, in AS 03-07 (page 16) staff writes "A patient received 85.1 MBq (2.3 mCi) of I-131 instead of the prescribed dosage of 11.1 MBq (300 μCi)." Consistent quantities should have been used -- either change 2.3 mCi to 2,300 μCi or the 300 μCi should have been changed to 0.3 mCi. I do not really expect Congress to fully appreciate the difference between a mCi and a μCi, but it is more understandable for them to read that the value should have been 0.3 mCi but it was 2.3 mCi. As another example, in AS-03-08, staff writes "A patient was prescribed a therapeutic dose to the thyroid of I-131 with an activity of 296 MBq (8mCi) but was erroneously administered 3.7 GBq (100 mCi) of I-131 instead." Again, I do not expect Congress to appreciate the difference between a MBq (10^{+6} Bq) and a GBq (10^{+9} Bq), but they would better understand the sentence if it read the patient should have received a dose of 296 MBq but instead received a dose of 3,700 MBq.