



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

December 16, 2010

EA-10-096

Mr. David W. Turner, Manager
Vallecitos Nuclear Center
GE-Hitachi Nuclear Energy Americas
6705 Vallecitos Road
Sunol, California 94586

SUBJECT: NOTICE OF VIOLATION, Inspection Report No. 070-00754/10-001

Dear Mr. Turner:

This refers to the inspection conducted on April 5-8 and August 16-19, 2010, at the Vallecitos Nuclear Center located in Sunol, California. This inspection was a routine examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. A final exit briefing was conducted with you telephonically on September 23, 2010.

During the inspection, the NRC was informed about an event that occurred on February 16, 2010, involving the uptake of fission product material and transuranics by two site contract workers. On that day, the two workers opened a sealed drum to characterize and to quantify the amount of radioactivity within the drum. Upon completion of their sampling, the workers monitored themselves with a hand-held frisker. One individual found contamination on his wrist and on a binder. This contamination was not logged or reported to their supervisors. The workers failed to conduct adequate surveys because they subsequently left the site with contaminated clothing. The next day, the same two workers along with a third worker, who was not involved in the previous day's activities, entered the restricted area. The two workers opened a second drum to add additional material to that drum. The third worker was not involved in opening the drum. Upon exiting from the restricted area, the three workers discovered that they were contaminated, and they reported this contamination to their supervisors.

Your short-term corrective actions included issuance of a stop-work order, decontamination of the contaminated areas, surveys for contamination that may have been removed from the site, retrieval and disposal of contaminated articles of clothing, and assessment of the two workers' internal doses. In response to NRC questions, you subsequently reported to the NRC the removal of contamination from the site in excess of licensed limits. This information was described in a 30-day licensee event report to the NRC dated June 30, 2010 (ML1018300060). In response to the event, you conducted a root cause analysis. The causes of the incident

included: (1) failure to follow procedures, (2) inadequate work control practices, and (3) inadequate training of the workers.

Based on the NRC's review of this incident, three apparent violations were identified during the inspection. Details about the three apparent violations are provided in NRC Inspection Report 070-00754/10-001, which was issued to you on October 8, 2010 (ML102860111). The apparent violations were considered for escalated enforcement action in accordance with the NRC Enforcement Policy.

On November 10, 2010, a pre-decisional enforcement conference was conducted in the Region IV office with members of your staff to discuss the apparent violations, their significance, their root causes, and your corrective actions. During the pre-decisional enforcement conference, you provided your proposed corrective actions to prevent recurrence of the incident, and you stated that your short and long term corrective actions have been completed.

Based on the information developed during the inspection and the information that you provided during the conference, the NRC has determined that three violations of NRC requirements occurred. These violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in the subject inspection report.

The first violation involves a failure to follow procedures with two examples – first by opening two sealed drums on separate occasions that contained transuranics and second by failing to document personnel contamination. As a result of these two failures to follow procedures, two individuals experienced uptakes of transuranics. Further, the workers' failure to document personnel contamination may have delayed any licensee responses by at least one day.

The potential consequences of this event were significant. The two individuals could have easily exceeded the occupational dose limits, especially the bone surface organ dose limit. One individual received a total effective dose equivalent exposure of 2.4 rem and a total organ dose equivalent of 42.48 rem to the bone surface, the limiting organ. These exposure results challenged the annual limits of 5 rem whole body dose and 50 rem organ dose. Because the potential consequences of this event were significant, this first violation has been characterized in accordance with the NRC Enforcement Policy as a Severity Level III violation.

The second violation involves a failure to conduct adequate whole body surveys by the two workers. As a result of inadequate surveys, at least five different pieces of contaminated clothing were carried offsite. The contaminated clothing removed from the site could have resulted in the contamination of worker homes, cars, and family members. The level of contamination on one piece of clothing exceeded the licensed limit, and the licensee subsequently reported the incident to the NRC. Because the potential consequences of this event were significant, as indicated by the necessity to report the incident to the NRC, this violation has been categorized in accordance with the NRC Enforcement Policy as a Severity Level III violation.

The third violation involves a failure to report the event to the NRC in a timely manner. The amount of contamination on a shoe exceeded the reporting threshold for a 30-day written report to the NRC. However, this reporting requirement was not recognized until after the NRC

questioned GE-Hitachi staff about the contamination levels. Your staff subsequently reported the event to the NRC by letter dated June 30, 2010. The NRC's awareness of the event was delayed until a Region IV inspector was made aware of the event during a routine inspection.

As a result of this reporting delay, the NRC was not able to fulfill its regulatory responsibility because the NRC may have elected to conduct additional inspection activities if the report had been filed in a timely manner. Because the failure to report this event to the NRC in a timely manner impacted the NRC's ability to perform its regulatory function, this violation has been categorized in accordance with the NRC Enforcement Policy as a Severity Level IV violation.

Because your facility has not been the subject of escalated enforcement actions within the last 2 years, the NRC considered whether credit was warranted for *Corrective Action* in accordance with the civil penalty assessment process described in Section 2.3.4 of the Enforcement Policy. As noted earlier, you took prompt corrective actions once you became aware of the incident. For example, you issued a stop-work order that lasted for several weeks. Additional corrective actions included implementation of improved work control practices, assessment and adjustment of contractor staffing and oversight, and updating of the event evaluation and reporting procedures.

Therefore, to encourage prompt identification and comprehensive correction of violations, and in recognition of the absence of previous escalated enforcement action, I have been authorized, after consultation with the Director, Office of Enforcement, not to propose a civil penalty in this case. However, significant violations in the future could result in a civil penalty. In addition, issuance of these Severity Level III violations constitutes escalated enforcement action that may subject you to increased inspection effort.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC review of your response to the Notice will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such information, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). The NRC also includes significant enforcement actions on its Web site at <http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions/>.

Should you have any questions concerning this letter, please contact Mr. Robert Evans, Senior Health Physicist, at (817) 860-8234, or Dr. D. Blair Spitzberg, Chief, Repository and Spent Fuel Storage Branch, at (817) 860-8191.

Sincerely,

/RA/

Elmo E. Collins, Regional Administrator
Region IV

Docket Number: 070-00754
License Number: SNM-960

Enclosure: Notice of Violation

cc w/enclosure:
Donald Krause, Manager
Regulatory Compliance and EHS
GE-Hitachi Nuclear Energy
Vallecitos Nuclear Center
6705 Vallecitos Road
Sunol, CA 94586

Scott P. Murray, Manager
Licensing & Liabilities COE, Nuclear
GE-Hitachi Nuclear Energy
P.O. Box 780
Wilmington, NC 28402

James D. Boyd, Commissioner
California Energy Commission
1516 Ninth Street (MS 34)
Sacramento, CA 95814

Gary Butner, Chief
California Dept. of Public Health
Radiologic Health Branch, Region 1
P.O. Box 997414, MS 7610
Sacramento, CA 95899-7414

Ron Rogus, Senior Health Physicist
California Dept. of Public Health
Radiologic Health Branch, MS 7610
1500 Capitol Avenue
Sacramento, CA 95814

GE-Hitachi Nuclear Energy Americas - 5 -
EA-10-096

Gonzalo Perez, Supervising Health Physicist
California Department of Public Health
Radiologic Health Branch, MS 7610
1500 Capitol Avenue
Sacramento, CA 95814

Kent M. Prendergast, Senior Health Physicist
California Dept. of Public Health
Radiologic Health Branch
850 Marina Bay Parkway
Building P, 1st Floor
Richmond, CA 98404-6403

Marylia Kelley
Executive Director, Tri-Valley CARES
2582 Old First Street
Livermore, CA 94551

Pleasanton Public Library
Attn: Ms. Karol Sparks
400 Old Bernal Avenue
Pleasanton, CA 94566

bcc w/enclosure:

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Elmo.Collins@nrc.gov;
Karla.Fuller@nrc.gov ;
Bill.Maier@nrc.gov;
Gerald.Schlapper@nrc.gov
Victor.Dricks@nrc.gov;
Lara.Uselding@nrc.gov;
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Vivian.Campbell@nrc.gov;
Jack.Whitten@nrc.gov;
Denise.Freeman@nrc.gov;
Christopher.ryder@nrc.gov;

Art.Howell@nrc.gov;
Ray.Kellar@nrc.gov;
Christi.Maier@nrc.gov;
Robert.Evans@nrc.gov;
Randy.Erickson@nrc.gov;
Rachel.Browder@nrc.gov;
Blair.Spitzberg@nrc.gov;
Christian.Einberg@nrc.gov;
Blair.Spitzberg@nrc.gov;
Carolyn.Faria-Ocasio@nrc.gov;
Peter.Habighorst@nrc.gov

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NOTICE OF VIOLATION

GE-Hitachi Nuclear Energy Americas
Sunol, California

Docket No. 070-00754
License No. SNM-960
EA-10-096

During an NRC inspection conducted on April 5-8 and August 16-19, 2010, three violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

- A. Special Nuclear License SNM-960, Condition S-9, states that the licensee shall establish, maintain, and follow written procedures for carrying out licensed activities.

Example 1:

Licensee procedure "GEH Vallecitos Nuclear Center Hot Cell Project TRU Waste Removal Work Instructions," Revision 5, Section 6.0, states, in part, that "after the drum and transfer shield have been verified to be free of removable contamination, the drum will be transported to the Building 200 Area for storage and further analysis. The drum will not be reopened on the site for any reason except to change the locking ring or if the drum becomes damaged and unsuitable for shipment."

Contrary to the above, on February 16 - 17, 2010, the licensee failed to follow written procedures for carrying out licensed activities as required by License Condition S-9. Specifically, on February 16, 2010, the licensee failed to follow "GEH Vallecitos Nuclear Center Hot Cell Project TRU Waste Removal Work Instructions," Revision 5, Section 6.0, when two site contract workers opened a drum transported to the Building 200 Area to conduct sampling of the contents of the drum. The opening of the drum was contrary to licensee procedure requirements and resulted in an uptake of radioactive materials by both individuals. One worker was assigned a whole body dose of 2.4 rem total effective dose equivalent and an organ dose of 42.48 rem total organ dose equivalent (bone surface). The second worker was assigned a whole body dose of 0.1 rem committed effective dose equivalent and an organ dose of 1.8 rem committed dose equivalent (bone surface). On February 17, 2010, these two workers opened a second drum to add material to the drum, contrary to procedure requirements.

Example 2:

Licensee procedure "Personnel Contamination Monitoring, Reporting, and Decontamination," Revision 2, Section VI.A.1 states that personnel and clothing contaminations shall be documented as follows—[for an] initial contamination greater than 100 corrected counts per minute[,] but less than 5,000 corrected counts per minute[,] use a form similar to Attachment 3 to the procedure, "Personnel Contamination Log."

Contrary to the above, on February 16, 2010, the licensee failed to follow "Personnel Contamination Monitoring, Reporting, and Decontamination," Revision 2, Section VI.A.1.

ENCLOSURE

Specifically, when exiting the area on February 16, 2010, one worker identified contamination on his wrist at 240-260 corrected counts per minute, but failed to log the personnel contamination as required by licensee procedure.

This is a Severity Level III violation (Section 6.7).

- B. 10 CFR 20.1501 requires that each licensee make or cause to be made surveys that may be necessary for the licensee to comply with the regulations in 10 CFR Part 20 and that are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present. Per 10 CFR 20.1003, *Survey* means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation.

Contrary to the above, on February 16, 2010, the licensee did not make or cause to be made surveys that were reasonable under the circumstances to evaluate the concentrations or quantities of radioactive material. Although the contractor workers performed a survey after a transuranic contamination event, they specifically failed to perform *an effective* whole body survey (frisk) prior to exiting the restricted area. As a result, the workers left the site with contaminated clothing.

This is a Severity Level III violation (Section 6.7).

- C. 10 CFR 20.2203(a)(3) states, in part, that each licensee shall submit a written report within 30 days after learning of any of the following occurrences: Levels of radiation or concentrations of radioactive material in--(i) A restricted area in excess of any applicable limit in the license; or (ii) An unrestricted area in excess of 10 times any applicable limit set forth in 10 CFR Part 20 or in the license (whether or not involving exposure of any individual in excess of the limits in § 20.1301).

Contrary to the above, as of March 21, 2010, the licensee failed to submit a written report within 30 days after learning of an occurrence that resulted in levels of radiation or concentrations of radioactive material in an unrestricted area in excess of 10 times any applicable limit set forth in this part or in the license (whether or not involving exposure of any individual in excess of the limits in § 20.1301).

Specifically, on February 19, 2010, the licensee discovered a contamination incident that resulted in clothing contaminated with special nuclear material in excess of 10 times the applicable limit specified in the license of 20 disintegrations per minute per 100 square centimeters. In particular, with a reporting limit of 200 disintegrations per minute per 100 square centimeters, a shoe was identified with 606 disintegrations per minute per 100 square centimeters – an amount greater than 10 times the applicable limit – in an unrestricted area. The required report was submitted to the NRC on June 30, 2010. The time between March 21 and June 30, 2010, is an interval greater than 30 days.

This is a Severity Level IV violation (Section 6.9).

Pursuant to the provisions of 10 CFR 2.201, GE-Hitachi Nuclear Energy Americas is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region IV, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-10-096 and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response.

If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time. If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information).

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 16th day of December 2010