



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

MAR 15 2018

**IN RESPONSE REFER TO:
NRC-2018-000278
Appeal of NRC 2018-000079**

Julian Tarver
Washington State Penitentiary IMU North
1313 N 13th Ave
Walla Walla, WA 99362

Dear Mr. Tarver,

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter dated December 22, 2017, in which you appealed the agency's decision related to your Freedom of Information Act (FOIA) request NRC 2018-000079. In your FOIA request, you sought three documents with the following accession (ML) numbers: ML16238A013, ML16216A711 and ML16216A704. On December 14, 2017, the NRC responded that it was unable to locate the requested documents.

Acting on your appeal, I have considered the issue raised in your appeal. Multiple NRC program offices conducted another thorough search and were able to find references to the three records you are seeking. These records had been originally created at the request of one NRC staff member, but subsequently deleted from the NRC's database (ADAMS). The NRC was able to locate these documents by their accession numbers during the processing of several FOIA requests seeking the same records within the past year, and we have considered them as described below.

ML16216A704 appears to be a Linked-In page of an individual when he was employed by the NRC. Given its personal nature, and since NRC has not located another copy of this record in any of its record systems, we have determined that it is a personal record. As such, it is not subject to the FOIA and has not been processed.

ML16216A711 is a copy of a briefing package prepared by David Lochbaum of the Union of Concerned Scientists, ahead of meetings scheduled with then-Chairman Burns and Commissioner Baran, which the Commission has confirmed was received. It is enclosed.

ML16238A013 is a copy of an NRC Form 183, Report of Security Incident Infraction/Violation, which is enclosed. To protect the privacy of the individual to whom the report relates, the individual's name and position title has been redacted on the basis of exemption 7(C).

Therefore, your appeal is being granted in part.

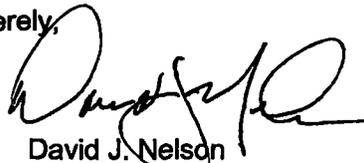
This is the final agency decision. As set forth in the FOIA (5 U.S.C. 552(a)(4)(B)), you can seek judicial review of this decision in a district court of the United States in the district in which you reside or have your principal place of business, in the district where the agency's records are situated, or in the District of Columbia.

As part of the 2007 FOIA amendments, the Office of Government Information Services (OGIS) was created to offer mediation services to resolve disputes between FOIA requesters and Federal agencies as a nonexclusive alternative to litigation. Using OGIS services does not affect your right to pursue litigation. If you are requesting access to your own records (which is considered a Privacy Act request), you should know that OGIS does not have the authority to handle requests made under the Privacy Act of 1974.

You may contact OGIS in any of the following ways:

Office of Government Information Services
National Archives and Records Administration
8601 Adelphi Road - OGIS
College Park, MD 20740-6001
Email: ogis@nara.gov
Telephone: 202-741-5770
Toll-free: 1-877-684-6448
Fax: 202-741-5769

Sincerely,



David J. Nelson
Chief Information Officer
Office of the Chief Information Officer

**Union of
Concerned Scientists**

ucsusa.org Two Brattle Square, Cambridge, MA 02138-3780 t 617.547.5552 f 617.864.9405
1825 K Street NW, Suite 800, Washington, DC 20006-1232 t 202.223.6133 f 202.223.6162
2397 Shattuck Avenue, Suite 203, Berkeley, CA 94704-1567 t 510.843.1872 f 510.843.3785
One North LaSalle Street, Suite 1904, Chicago, IL 60602-4064 t 312.578.1750 f 312.578.1751

MARCH 13, 2015

MATERIALS FOR MEETINGS WITH

CHAIRMAN STEPHEN G. BURNS

AND

COMMISSIONER JEFF BARAN

**DAVID LOCHBAUM
DIRECTOR, NUCLEAR SAFETY PROJECT**

A G E N D A

- ① Lying to the American Public about Nuclear Safety**
- ② Improperly Withholding Information from the Public**
- ③ Lessons from Fort Calhoun**
- ④ UCS Annual Report on the NRC and Nuclear Plant Safety**

Lying to the American Public about Nuclear Safety

Background

On April 19, 2011, the NRC staff conducted the annual assessment meeting for the Oconee nuclear station in Seneca, South Carolina (ML1111707829). The first of two bullets on slide 2 of the NRC staff's slideshow indicated that a purpose of the meeting was to provide:

- *“A public forum for discussion of the licensee's performance in 2010”*

With Slide 15, the NRC staff summarized a yellow and a white finding by NRC inspectors during 2010.

But at a public meeting conducted 5 weeks after flooding caused three reactor meltdowns at Fukushima, the NRC staff failed to mention to the public that it had issued a Confirmatory Action Letter (ML12363A086) to Duke on June 22, 2010, requiring the company to take 15 measures to better protect the three reactors at Oconee from meltdown from flooding damage should the upriver Jocassee Dam fail.

The NRC staff had a tremendous opportunity to inform the public that, nine months prior to Fukushima, the NRC had identified similar flood protection vulnerabilities at Oconee and had taken steps to ensure those vulnerabilities were addressed. In fact, several of the 15 measures had already been implemented while several others were far down the road to implementation.

But instead the NRC staff opted to play “duck and cover” and lie to the public.

The stated purpose of the meeting was to discuss licensee performance in 2010.

The licensee's performance in 2010 prompted the NRC to issue a Confirmatory Action Letter (CAL) in June 2010. CALs are rarely issued – the NRC staff issued more white findings in 2010 than CALs. The NRC staff chose to discuss its white finding at Oconee but remain silent about its CAL.

That incredibly poor judgment by the NRC staff undermined my trust and confidence in the agency. I now find it harder to believe it when the NRC staff says some condition is okay or that a problem has been resolved.

Given the staff's demonstrated propensity for hiding relevant information from the public and instead providing the public with a distorted, misleading version of nuclear plant safety, how can UCS and the public trust this agency to tell the whole truth and not just selective sub-truths?

Improperly Withholding Information from the Public

Background

In October 2004, the NRC staff sought and obtained Commission permission to withhold all incoming documents from licensees about fire protection and emergency planning (ML042310663). Since then, the NRC developed guidance documents and revised regulations (10 CFR 2.390 in 2008) for licensees to ask NRC to withhold all or portions of documents they submit that contain sensitive security information. Despite this process being available for years, the NRC staff continues to withhold incoming fire protection and emergency planning documents, even when licensees do not request such withholding.

Many of the withheld documents involved license amendment requests. By improperly withholding these documents, the NRC staff deprived the public of rights under federal regulations to contest requested actions.

The NRC staff has been handling submissions of Updated Safety Analysis Reports (USAR) oddly. Some USARs are placed into public ADAMS in their entirety (e.g., Beaver Valley Unit 2 at ML14339A408, Byron and Braidwood at ML1436A393, and Watts Bar Unit 2 at ML14155A256). Some USARs are withheld from public ADAMS in their entirety (e.g., Diablo Canyon per NRC memo at ML14022A120). The NRC staff has told the Senate EPW staff, the NRC OIG staff, and me three different stories last fall on why USARs may or may not be publicly available.

The USARs are key licensing documents, perhaps the single most important licensing document in existence. The USARs are heavily relied upon by licensees and NRC staff in preparing, reviewing, and approving operating license amendments. By improperly depriving the public of access to these vital documents, the NRC staff is unfairly impeding the public's ability to participate in licensing proceedings in a meaningful way.

That so many USARs are publicly available in ADAMS strongly suggests there is no legitimate reason for withholding the other USARs.

UCS and others frequently request NRC Communication Plans via the Freedom of Information Act. The NRC staff typically provides the requested plans with only personal privacy information (i.e., home telephone numbers) redacted (e.g., Salem/Hope Creek Safety Concious Work Environment issues at ML060620540, Oconee flood protection 50.54 letter at ML12326A389, Indian Point CST pipe leak at ML110030931, Seabrook concrete degradation at ML14161A638, Davis-Besse concrete degradation at ML14171A271, etc.). But the NRC staff has also provided plans with all information, except page numbers, redacted contending the withheld information was "deliberative process" (Diablo Canyon seismic re-analysis at ML15033A280).

The NRC staff is playing games. The issues at Indian Point and Seabrook involved aging issues at a time when the reactors were seeking operating license renewals. The NRC staff provided essentially unredacted Communication Plans.

But the NRC staff redacted virtually the entire Communications Plan for Diablo Canyon's seismic issues. True, the seismic issues are currently being monitored by the State and the NRC within an operating license renewal application proceeding, but again that was also the case at Indian Point and Seabrook.

UCS Recommendation

UCS wrote to the NRC Chairman last November asking that the Commission reverse the policy of blanket withholding all incoming fire protection and emergency planning records.

UCS wrote to the NRC Inspector General asking that OIG investigate whether the agency violated federal regulations by approving licensing requests about fire protection and emergency planning while denying the public access to the underlying documents.

The NRC should suspend issuing all operating licenses and approving all amendments to operating licenses until the agency has made publicly available all the documents it has been improperly withholding the past decade.

Withholding license amendment requests and USARs deprived the public its rights under federal regulations to participate in these licensing actions in a meaningful way. By improperly withholding these documents, the NRC staff is essentially giving its licensees uncontested proceedings and transforming purportedly open processes into closed, secret negotiations between the NRC staff and licensees.

The NRC cannot contest the "cozy" label by being "cozy" with licensees and denying the public its legal rights.

NOTE: UCS does not challenge the fact that certain information needs to be withheld. When information satisfies one or more of the criteria for withholding, then by all means withhold it. But when information does not meet any of the criteria for withholding, then don't withhold it.

NOTE: UCS also recognizes that given the sheer volume of documents handled by the NRC staff, there will be occasional mistakes made withholding some that should not be and disclosing others that should be. UCS's concerns are not with the exceptions to the rule. UCS's concern is when the rule is mis-applied allowing many documents to be handled improperly.

Lessons from Fort Calhoun

Background

Fort Calhoun restarted in December 2013 following a 30-month outage to fix many longstanding safety problems.

It marked the 52nd time that a U.S. reactor remained shut down longer than a year to correct safety problems.

Fort Calhoun's outage began in April 2011, about a month after Fukushima.

The NRC formed a task force to extract lessons learnable from Fukushima and currently has a range of activities underway to implement those lessons.

The NRC did nothing to formally extract lessons learnable from Fort Calhoun.

Many of the safety problems that had to be fixed before NRC allowed Fort Calhoun to restart existed since 1996 or before.

Why had all the licensee's testing and NRC's inspections missed these safety problems?

Four times since the Reactor Oversight Process (ROP) was initiated, the NRC staff returned Fort Calhoun to Action Matrix Column 1. Each time, the many safety problems that were finally fixed in 2011-2013 had existed but were overlooked.

Twice since the ROP was initiated, the NRC staff returned Fort Calhoun to Action Matrix Column 2 from Column 3. Each time, the many safety problems that were finally fixed in 2011-2013 had existed but were overlooked.

UCS Recommendation

The NRC should formally evaluate Fort Calhoun's year-plus outage to identify lessons that enhance the effectiveness of its oversight efforts.

For example, the evaluation could take the safety issues on the NRC staff's Confirmatory Action Letter and reported to the NRC via Licensee Event Reports (LERs) from 2010 to 2014 and identify the NRC inspection procedures that examined these areas. These applicable inspection procedures could then be assessed to see whether changes in what gets examined or how it gets examined could have detected these problems. Similarly, the evaluation might identify changes to the process used by the NRC staff to return Fort Calhoun to Action Matrix Columns 1 and 2 despite numerous safety problems that kept the reactor shut down for safety problems for 30 months. These might have been missed opportunities to have detected and corrected at least some of the many safety problems sooner.

Reference Document

UCS Issue Brief "No More Fukushimas; No More Fort Calhouns," February 2015.

UCS Annual Report on the NRC and Nuclear Plant Safety

Background

UCS initiated a series of annual reports on the NRC and nuclear power plant safety in March 2011. Each report summarizes the events the prior year that prompted the NRC to dispatch special inspection teams (SITs) or augmented inspection teams (AITs). Each report summarizes positive outcomes achieved by the NRC the prior year as well as negative outcomes.

This year's report noted that both the number and the severity of events triggering SITs/AITs continues a declining trend and acknowledges that NRC's efforts very likely factored in these positive trends.

This year's report commends the NRC for undertaking two pro-active measures: the Reactor Oversight Process self-assessments and the Knowledge Management Program.

This year's report criticizes the NRC for improperly withholding documents from the public that denied meaningful participation in NRC's regulatory decision-making processes, for tolerating safety culture metrics that it found unacceptable when observed at nuclear plant sites and for subjecting two NRC engineers to recurring investigations because they voiced safety concerns.

UCS Recommendation

The NRC instituted its Lessons Learned Program a decade ago. SECY-14-0101 (ML14175A780) is the most recent annual report on that program. It is a well-intended program gone terribly awry.

A total of merely seven items were presented to the Lessons-Learned Oversight Board between August 2013 and May 2014. That list included only two reports from the NRC's Office of the Inspector General (OIG), no reports from the Government Accountability Office (GAO), none from the US Congress, and none from any external entity other than one classified, non-public DOE report.

It's virtually impossible to draw meaningful insights about trends and emerging problem areas from such paltry inputs. To be effective, the NRC's Lessons Learned Program must consider more inputs. For example, all OIG reports and GAO should be entered into the program. Materials from external organizations should be reviewed for possible inclusion in the program.

The proliferation of inputs to the Lessons Learned Program would not require a linear increase in the full-time equivalents needed to implement the program. The NRC staff responds to OIG and GAO reports. Thus, the additional work load for the Lessons Learned Program would be to monitor the findings and recommendations from the inputs seeking to identify common themes and whether a problem found here might also exist there.

Reference Documents

UCS report dated March 2015, "The NRC and Nuclear Power Plant Safety in 2014: Tarnished Gold Standard."

Excerpts by UCS



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

April 25, 2011

Mr. T. Preston Gillespie, Jr.
Site Vice President
Duke Energy Carolinas, LLC
Oconee Nuclear Station
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: PUBLIC MEETING SUMMARY – OCONEE NUCLEAR STATION – DOCKET
NOS. 50-269, 50-270 AND 50-287

Dear Mr. Gillespie:

This refers to the meeting conducted on April 19, 2011, in Seneca, SC. The purpose of this meeting was to discuss the NRC's Reactor Oversight Process (ROP) and the NRC's annual assessment of plant safety performance for the period of January 1, 2010, to December 31, 2010. The major topics addressed were the NRC's assessment program and the results of the assessment. A listing of meeting attendees and information presented during the meeting are enclosed.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room (PDR) or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this meeting, please contact me at (404) 997-4607.

Sincerely,

/RA/

Jonathan H. Bartley, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Docket Nos.: 50-269, 50-270, 50-287
License Nos.: DPR-38, DPR-47, DPR-55

Enclosures: 1. List of Attendees
2. Powerpoint Presentation

cc w/encls: (See page 2)

Oconee Annual Public Meeting

April 19, 2011

NAME	AFFILIATION
DICK MANGUM	WGCC Walhalla
Bill Pitesa	Duke Energy
David A. Solley	resident
Jim Mow	RESIDENT
John P. Murray	LEPC / Council
David Thompson	resident
Anna Simon	Greenville News
Patrick Collins	Greenville News
Thomas J. Sefcik	Contractor @ Oconee
Michael Samant-Huyuh	SC URS
Lynn Tortora	resident
Angie Tortora	TCONE
Ricky L. Henning	Greenville Hospital System
JEFF BATESON	Duke
Thomas Ray	Duke
Tom Patterson	Duke
Patricia Guyane	Duke
Ron Hernandez	resident
Susan Genoble	UNCW student
Lee Genoble	Engineer

Oconee Annual Public Meeting

April 19, 2011

NAME	AFFILIATION
6) <u>Janet Thompson</u>	
<u>Kimberly</u>	
<u>David M. ...</u>	
<u>J. ...</u>	
<u>Paul ...</u>	
<u>Eric Lutz</u>	<u>Oconee County Emergency Services</u>
<u>R. ...</u>	<u>...</u>
<u>C. ...</u>	<u>"</u>
<u>...</u>	
<u>...</u>	
<u>Scott ...</u>	<u>...</u>
<u>David ...</u>	<u>Shelter Care Subdivision</u>
<u>George ...</u>	
<u>...</u>	
<u>Florence B. Beber</u>	<u>SE OCS</u>
<u>F</u>	
<u>Agnes ...</u>	<u>Oconee County Emergency Services</u>
<u>...</u>	
<u>Mandy ...</u>	<u>WVFE</u>
<u>Michael ...</u>	<u>WVFE</u>

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Protecting People and the Environment

Oconee Nuclear Station Annual Assessment Meeting

Reactor Oversight Program - 2010

Nuclear Regulatory Commission - Region II

Seneca, SC

April 19, 2011

Purpose of Today's Meeting

- A public forum for discussion of the licensee's performance in 2010
- **Address the performance issues identified in the annual assessment letter**

Oconee Assessment Results

January 1 - December 31, 2010

Oconee Units 1, 2, and 3 were in the Degraded Cornerstone Column for all four quarters due to a Yellow Finding (Units 1, 2, and 3) and a White Finding (Units 2 and 3).

Safety Significant Findings or Pls

- **Yellow Violation of TS 3.10.1 for SSF related coolant makeup subsystem inoperable for greater than allowed by technical specifications (Units 1, 2, and 3)**
- **White Violation of Criterion XVI, Corrective Action, for a failure to promptly identify and correct an adverse condition affecting operability of the Unit 2 and Unit 3 standby shutdown facility (Units 2 and 3)**



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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

June 22, 2010

CAL 2-10-003

Mr. David A. Baxter
Site Vice President
Duke Energy Carolinas, LLC
Oconee Nuclear Station
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: CONFIRMATORY ACTION LETTER - OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 COMMITMENTS TO ADDRESS EXTERNAL FLOODING CONCERNS (TAC NOS. ME3065, ME3066, AND ME3067)

Dear Mr. Baxter:

This letter confirms commitments made by Duke Energy Carolinas, LLC (the licensee) in your June 3, 2010, letter. Specifically, the June 3, 2010, letter listed compensatory measures the licensee will implement at the Oconee Site and Jocassee Dam to mitigate potential external flooding hazards resulting from a potential failure of the Jocassee Dam. The compensatory measures listed in the enclosure shall remain in place until final resolution of the inundation of the Oconee site from the failure of the Jocassee Dam has been determined by the licensee and agreed upon by the U.S. Nuclear Regulatory Commission (NRC), and all modifications are made to mitigate the inundation. The compensatory measures and implementation dates are set forth in the enclosure to this letter.

In addition to implementing the compensatory measures, pursuant to my telephone conversation with Mr. Bill Pitesa of your company on June 22, 2010, you shall submit to the NRC by August 2, 2010, all documentation necessary to demonstrate to the NRC that the inundation of the Oconee site resulting from the failure of the Jocassee Dam has been bounded. Also, you shall submit by November 30, 2010, a list of all modifications necessary to adequately mitigate the inundation, and shall make all necessary modifications by November 30, 2011.

Pursuant to Section 182 of the Atomic Energy Act, 42 U.S.C. 2232, you are required to:

- 1) Notify me immediately if your understanding differs from that set forth above;
- 2) Notify me if for any reason you cannot complete the actions within the specified schedule and advise me in writing of your modified schedule in advance of the change; and
- 3) Notify me in writing when you have completed the actions addressed in this Confirmatory Action Letter.

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Information in this record was deleted in
accordance with the Freedom of Information Act.
Exemptions: 1F
FOIA/PA 2012-0128

~~OFFICIAL USE ONLY - SECURITY RELATED INFORMATION~~

DEC .

2

Issuance of this Confirmatory Action Letter does not preclude issuance of an Order formalizing the above commitments or requiring other actions on the part of the licensee; nor does it preclude the NRC from taking enforcement action for violations of NRC requirements that may have prompted the issuance of this letter. In addition, failure to take the actions addressed in this Confirmatory Action Letter may result in enforcement action.

This Confirmatory Action Letter will remain in effect until the NRC has concluded that all modifications necessary to adequately mitigate the inundation of the Oconee site from the failure of the Jocassee Dam has been completed.

Sincerely,

/RA/

Luis A. Reyes
Regional Administrator

Docket Nos. 50-269, 50-270, 50-287
License Nos.: DPR-38, DPR-47, DPR-55

Enclosure: Compensatory Measures

cc w/enci: (See next page)

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~~OFFICIAL USE ONLY - SECURITY-RELATED INFORMATION~~

COMPENSATORY MEASURES

NUMBER	COMPENSATORY MEASURES	IMPLEMENTATION STATUS
1	Perform flooding studies using the Hydrologic Engineering Center - River Complete Analysis System (HEC-RAS) model for comparison with previous DAMBRK models to more accurately represent anticipated flood heights in the west yard following a postulated failure of the Jocassee Dam.	Complete
2	Maintain plans, procedures (Jocassee and Oconee) and guidance documents implemented (Oconee) to address mitigation of postulated flood events which (b)(7)(F) and are consistent with current perspectives gained following the HEC-RAS sensitivity studies and the subsequent 2D inundation studies. To the extent practical, the mitigation strategy is similar to existing extensive plant damage scenario (B.5.b) equipment, methods and criteria.	Implemented
3	Duke Energy Hydro Generation will create a guidance document to consolidate river management and storm management processes. (Includes the Jocassee Development and the Keowee Development.)	Implemented
4	Maintain a dam safety inspection program that includes: (1) weekly dam safety inspections of the Jocassee Dam by Duke Energy personnel, (2) dam safety inspections following any 2-inch or greater rainfall or felt seismic event, (3) annual dam safety inspections by Duke Energy, (4) annual dam safety inspections by FERC representatives, (5) five year safety inspections by FERC approved consultants, and (6) five year underwater inspections.	Implemented
5	Maintain a monitoring program that includes: (1) continuous remote monitoring from the Hydro Central Operating Center in Charlotte, NC, (2) monthly monitoring of observation wells, (3) weekly monitoring of seepage monitoring points, and (4) annual surveys of displacement monuments.	Implemented
6	Assign an Oconee engineer as Jocassee Dam contact to heighten awareness of Jocassee status.	Implemented
7	Install ammeters and voltmeters on Keowee spillway gates for equipment condition monitoring.	Complete
8	Ensure forebay and tailrace level alarms are provided for Jocassee to support timely detection of a developing dam failure.	Complete
9	Add a storage building adjacent to the Jocassee spillway to house the backup spillway gate operating equipment (e.g., compressor and air wrench).	Complete

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Enclosure

NUMBER	COMPENSATORY MEASURES	IMPLEMENTATION STATUS
10	Obtain and stage a portable generator and electric drive motor near the Jocassee spillway gates to serve as a second set of backup spillway gate operating equipment.	Complete
11	Conduct Jocassee Dam failure Table Top Exercise with Oconee participation to exercise and improve response procedures.	08/30/2010
12	Instrument and alarm selected seepage monitoring locations for timely detection of degrading conditions.	08/31/2010
13	Provide additional video monitoring of Jocassee Dam (e.g., dam toe, abutments, and groin areas) for timely assessment of degrading conditions.	08/31/2010
14	Obtain and stage a second set of equipment (including a B.5.b-type pump) for implementation of the external flood mitigation guidance.	11/30/2010
15	Conduct Jocassee Dam/Oconee Emergency Response Organization Drill to exercise and improve response procedures.	12/31/2010

NOTES:

1. The word "complete" is used in the status column if the commitment regards a specific one-time equipment-related or analysis-related action that has been completed.
2. The word "implemented" is used in the status column if the commitment describes an on-going action that has been implemented.

**POLICY ISSUE
(Notation Vote)**

October 19, 2004

SECY-04-0191

FOR: The Commissioners

FROM: Luis A. Reyes
Executive Director for Operations /RA/

SUBJECT: WITHHOLDING SENSITIVE UNCLASSIFIED INFORMATION CONCERNING
NUCLEAR POWER REACTORS FROM PUBLIC DISCLOSURE

PURPOSE:

To obtain Commission approval of guidance to be issued to the Nuclear Regulatory Commission (NRC) staff, power reactor licensees, and other agency stakeholders for withholding sensitive unclassified (nonsafeguards) information from public disclosure.

SUMMARY:

In a staff requirements memorandum dated May 7, 2004, the Commission directed the NRC staff to develop guidance to ensure information that could reasonably be expected to be useful to potential adversaries is withheld from public disclosure. In determining whether information should be withheld or released, the NRC staff must attempt to appropriately balance our desire to maintain the openness of NRC's regulatory processes with the need to protect the public from possible terrorist threats. This paper provides for Commission review and approval the NRC staff's proposed approach for determining the appropriate handling of information and more specific guidance for withholding or releasing information about nuclear power reactors (Attachment 1).

CONTACTS: William D. Reckley, NRR/IRT
301-415-1323

Margie Kotzalas, NRR/IRT
301-415-2737

Subject	Discussion and/or typical controls
Test Program (Initial and Inservice Inspections and Testing)	Uncontrolled
Accident Analysis	Uncontrolled - Accident analyses typically included in licensing-related correspondence involve conservative models to demonstrate a plant's ability to respond to design basis transients (i.e., nonsecurity related events), and is not treated as sensitive.
Technical Specifications (including Bases)	Uncontrolled
Quality Assurance	Uncontrolled
Fire Protection	Incoming documents are initially profiled as nonpublic - staff will review for release upon request. Most information related to fire protection will not need to be designated as sensitive. Drawings showing details such as the specific location of equipment, doorways, stairways, etc. are to be withheld under 10 CFR 2.390.
Emergency Planning	Incoming documents are initially profiled as nonpublic - staff will review for release upon request. Most information related to emergency planning will not need to be designated as sensitive. Special attention is needed to determine if information relates to the response by a licensee or government agency to a terrorist attack. Note that some State and local governments consider parts of their emergency plans to be sensitive.
Security	Information related to security programs at nuclear reactors is generally designated as SGI and is protected in a manner similar to classified confidential information. Security-related information within the inspection program and reactor oversight process is withheld from public disclosure under 10 CFR 2.390.
Risk-Informed Decisionmaking (e.g., documents related to risk-informed licensing actions, accident sequence precursor (ASP) analyses, significance determination process (SDP) notebooks, design certifications)	Uncontrolled - exceptions include information related to security activities (e.g., vulnerability assessments) and information related to uncorrected configurations or conditions that could be useful to an adversary. Special attention should be applied to this area and information should be withheld if it describes a vulnerability or plant-specific weakness that is more helpful to an adversary than are the insights provided in open source literature. Detailed computer models have been and will continue to be withheld from public disclosure.



FirstEnergy Nuclear Operating Company

Beaver Valley Power Station
P.O. Box 4
Shippingport, PA 15077

Eric A. Larson
Site Vice President

724-682-5234
Fax: 724-643-8069

November 24, 2014
L-14-360

10 CFR 50.71(e)
10 CFR 50.54(a)
10 CFR 54.37(b)

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-001

SUBJECT:
Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
Submittal of the Updated Final Safety Analysis Report, Revision 21

In accordance with the requirements of 10 CFR 50.71(e), the FirstEnergy Nuclear Operating Company (FENOC) is hereby submitting to the Nuclear Regulatory Commission (NRC) the Beaver Valley Power Station (BVPS), Unit No. 2, Updated Final Safety Analysis Report (UFSAR) Revision 21 in CD-ROM format. This submittal reflects facility and procedure changes implemented between November 2, 2012 (the end of Refueling Outage 16), and May 23, 2014 (the end of Refueling Outage 17), along with several changes implemented after Refueling Outage 17.

In accordance with NRC guidance for electronic submissions, Attachment 1 provides a listing of the document components that comprise the enclosed CD-ROM. In addition to the UFSAR, the CD-ROM includes the BVPS, Unit No. 2 Licensing Requirements Manual, Revision 81, and the Technical Specification Bases, Revision 27. The Technical Specification Bases are submitted in accordance with Technical Specification 5.5.10.d, "Technical Specifications (TS) Bases Control Program."

In accordance with 10 CFR 50.54(a), FENOC is hereby submitting a copy of the current revision of the FENOC Quality Assurance Program Manual (QAPM). The QAPM, Revision 19, is included in the enclosed CD-ROM.

Attachment 2 includes a summary of information removed from the BVPS, Unit No. 2 UFSAR in accordance with Appendix A to Nuclear Energy Institute (NEI) 98-03, "Guidelines for Updating Final Safety Analysis Reports," Revision 1.

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NRR

Beaver Valley Power Station, Unit No. 2
L-14-360
Page 2

FENOC conducted a review of BVPS, Unit No. 2 plant changes for 10 CFR 54.37(b) applicability. No components were determined to meet the criteria for newly identified components as clarified by Regulatory Issue Summary (RIS) 2007-16, Revision 1, "Implementation of the Requirements of 10 CFR 54.34(b) for Holders of Renewed Licenses."

There are no regulatory commitment changes to be submitted in accordance with NEI 99-04, "Guidelines for Managing NRC Commitment Changes."

This certifies, to the best of my judgment and belief, that Revision 21 of the BVPS, Unit No. 2 UFSAR accurately presents changes made since the previous submittal that are necessary to reflect information and analysis submitted to the Commission or pursuant to Commission requirements.

This letter contains no new regulatory commitments. If you have any questions regarding this report, please contact Mr. Thomas A. Lentz, Manager – Fleet Licensing, at 330-315-6810.

Sincerely,



Eric A. Larson

Attachments:

1. Document Components on CD-ROM
2. Information Removed from the BVPS, Unit No. 2 UFSAR

Enclosures:

Beaver Valley Power Station, Unit No. 2 UFSAR, Licensing Requirements Manual, Technical Specification Bases, and QAPM (on CD-ROM)

cc: NRC Region I Administrator
NRC Resident Inspector
NRC Project Manager
Director BRP/DEP (without Enclosures)
Site BRP/DEP Representative (without Enclosures)

First of 5,528 unredacted pages
in public ADAMS



Byron/Braidwood Nuclear Stations

Updated Final Safety Analysis Report

(UFSAR)

Revision 15

December 2014

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-68
NRC Docket Nos. STN 50-454, STN 50-455, and 72-68

Braidwood Station, Units 1 and 2
Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456, STN 50-457, and 72-73

Attachment 1 to be withheld from Public Disclosure Under 10 CFR 2.390. When separated from this Enclosure, this letter is decontrolled.



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

May 30, 2014

10 CFR 50.4
10 CFR 50.34(b)
10 CFR 2.390(d)(1)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Unit 2
Docket No. 50-391

Subject: WATTS BAR NUCLEAR PLANT (WBN) – UNIT 2 – FINAL SAFETY ANALYSIS REPORT (FSAR), AMENDMENT 112

- References:
1. TVA letter to NRC dated February 13, 2014, "Watts Bar Nuclear Plant (WBN) - Unit 2 - Final Safety Analysis Report (FSAR), Amendment 111"
 2. TVA letter to NRC dated May 8, 2014, "Watts Bar Nuclear Plant (WBN) Unit 2 – Inservice Test (IST) Program/Preservice Test (PST) Program"

This letter transmits WBN Unit 2 FSAR Amendment 112 (A112), which reflects changes made since the issuance of Amendment 111 on February 13, 2014 (Reference 1).

Enclosure 1 contains a summary listing of FSAR sections and corresponding Unit 2 change package numbers associated with the A112 FSAR changes.

FSAR A112 is contained on the enclosed Optical Storage Media (OSM #1) (Attachment 1). The FSAR contains security-related information identified by the designation "Security-Related Information - Withhold Under 10 CFR 2.390." TVA hereby requests this information be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390. A redacted version of the FSAR is contained on OSM #2 (Attachment 2), which is suitable for public disclosure.

Enclosure 2 contains a listing of the FSAR pages that have been redacted. Enclosure 3 lists the files and file sizes on the security-related OSM (OSM #1), and Enclosure 4 lists the files and file sizes on the publicly available OSM (OSM #2).

In regard to Supplemental Safety Evaluation Report (SSER), Appendix HH Open Items, the following can be stated to address three open items:

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U.S. Nuclear Regulatory Commission
Page 2
May 30, 2014

For Open Item No. 1, involving power assisted cable pulls, WBN Unit 2 construction has not made nor will not be making any such power assisted cable pulls in the completion of WBN Unit 2. A112 addresses Open Item No. 35, involving Component Cooling System (CCS), and Open Item No. 91, involving Feedwater Purity.

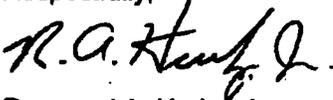
In addition, FSAR Change Package 2-112-10 addresses a clarification to the IST Program code of record as committed to in Reference 2.

Attachment 3 provides replacement disks for Amendment 111 provided in Reference 1. During the course of Amendment 112 preparation, it was discovered that the discs containing the Amendment 111 files previously provided by Reference 1 did not contain Section 6.2.6. Enclosures 5 and 6 have been updated to reflect this addition for file sizes related to the security-related and the publicly available OSMs for Amendment 111.

There are no new commitments made in this letter. This letter does not close any "Generic Communications." If you have any questions, please contact Gordon Arent at (423) 365-2004.

I declare under the penalty of perjury that the foregoing is true and correct. Executed on the 30th day of May, 2014.

Respectfully,



Raymond A. Hruby, Jr.
General Manager, Technical Services
Watts Bar Unit 2

Enclosures:

1. WBN Unit 2 FSAR A112, "Summary Listing of A112 FSAR Changes"
2. WBN Unit 2 FSAR A112, "Summary of Redacted Pages"
3. WBN Unit 2 FSAR A112, "List of files and file sizes on the security-related OSM (OSM #1)"
4. WBN Unit 2 FSAR A112, "List of files and file sizes on the publicly available OSM (OSM #2)"

Attachments:

1. OSM #1: WBN Unit 2 FSAR Amendment 112 - Security-Related Information - Withhold Under 10 CFR 2.390
2. OSM #2: WBN Unit 2 FSAR Amendment 112 - Publicly Available Version
3. OSM #1: WBN Unit 2 FSAR Amendment 111 - Security-Related Information - Withhold Under 10 CFR 2.390
- OSM #2: WBN Unit 2 FSAR Amendment 111 - Publicly Available Version

cc: See Page 3

June 23, 2014

MEMORANDUM TO: Michael T. Markley, Chief
Plant Licensing IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

FROM: Peter J. Bamford, Project Manager /RA/
Plant Licensing IV-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

SUBJECT: DIABLO CANYON POWER PLANT, UNITS 1 AND 2 - REVIEW OF
FINAL SAFETY ANALYSIS REPORT UPDATE, REVISION 21 (TAC
NOS. MF2945 AND MF2946)

This memorandum documents the in-office review of Revision 21 to the Final Safety Analysis Report (FSAR) Update for Diablo Canyon Power Plant (DCPP), Units 1 and 2, dated September 16, 2013 (not publicly available). The FSAR Update was submitted by Pacific Gas and Electric Company (PG&E, the licensee), in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.71(e). PG&E follows the guidance of Nuclear Energy Institute (NEI) 98-03, Revision 1, "Guidelines for Updating Final Safety Analysis Reports," and NEI 99-04, Revision 0, "Guidelines for Managing NRC Commitment Changes."

The time requirements for FSAR submittals are stated in 10 CFR 50.71(e)(4). Revisions must be filed annually or 6 months after each refueling outage provided the interval between successive updates does not exceed 24 months. In its letter dated December 8, 1997, the licensee requested an exemption from the time requirements stated in 10 CFR 50.71(e)(4) for DCPP, Units 1 and 2. As discussed in the licensee's exemption request, DCPP, Units 1 and 2, have a common FSAR. The rule would require FSAR updates within 6 months of each refueling outage, resulting in required FSAR updates every 12 months. As such, the licensee requested an exemption to allow the updates of the FSAR to be submitted within 6 months after each DCPP, Unit 2, refueling outage, but not to exceed 24 months from the last update. The Nuclear Regulatory Commission (NRC) staff approved the exemption in a letter dated March 12, 1998 (ADAMS Accession No. ML022400141). DCPP, Unit 2, completed its last refueling outage on March 23, 2013. The previous update of the DCPP FSAR, Revision 20, was submitted on November 16, 2011 (ADAMS Accession No. ML11332A181). Therefore, the September 16, 2013, submittal date for Revision 21 of the DCPP FSAR meets the requirements approved in the exemption since the submittal was within 6 months of the last DCPP, Unit 2, refueling outage and does not exceed 24 months from the last FSAR update.

As stated in the licensee's letter dated September 16, 2013, Revision 21 of the DCPP FSAR contains changes to reflect the plant configuration as of March 23, 2013. This meets the requirement in 10 CFR 50.71(e)(4) which states that the revisions must reflect all changes up to a maximum of 6 months prior to the date of filing.

Amendments

Revision 21 covered changes to the FSAR Update during the period June 6, 2011, through September 16, 2013. Each of the license amendments issued during the period were reviewed for impacts on the FSAR Update and included Amendment Nos. 211/213 through 216/218 (for Units 1 and 2, respectively). The following three amendments were identified which resulted in impacts on the FSAR Update:

- Amendment Nos. 211/213, dated March 29, 2012 (ADAMS Accession No. ML120790338), modified FSAR Update Sections 8.1.4.3, "Regulatory Guides," and 8.3.1.1.13.1, "Diesel Generator Unit Description," to identify an exception to Revision 0 of Regulatory Guide 1.9, "Application and Testing of Safety-Related Diesel Generators in Nuclear Power Plants";
- Amendment Nos. 212/214, dated October 31, 2012 (ADAMS Accession No. ML120300114), modified FSAR Update Sections 15.2.7.3, "Results," and 15.2.16, "References," to adopt a new analysis methodology for establishing the reduced power range neutron flux high setpoint for one inoperable main steam safety valve; and
- Amendment Nos. 214/216, dated January 9, 2013 (ADAMS Accession No. ML12345A379), modified FSAR Update Section 4.3.2.2, "Power Distribution," to allow the use of the Best Estimate Analyzer for the Core Operations-Nuclear (BEACON) Power Distribution Monitoring System methodology, as described in Westinghouse Electric Company LLC's WCAP-12472-P-A, Addendum 1-A, "BEACON Core Monitoring and Operation Support System," January 2000.

The FSAR Update changes for Amendment Nos. 211/213 were not apparent in Revision 21. The licensee had reorganized the FSAR Update, removing the numbered Sections 8.1.4.3 and 8.3.1.1.13.1. However, the licensee included the amendment's language in Section 8.3.1.1.6.3.13, "Safety Guide 9, March 1971 – Selection of Diesel Generator Set Capacity for Standby Power Supplies," and Section 8.3.1.1.6.1.13, "Safety Guide 9, March 1971 – Selection of Diesel Generator Set Capacity for Standby Power Supplies." With the inclusion of this exception in these two sections, the NRC staff concludes that the FSAR Update is consistent with the updates stated in Amendment Nos. 211/213.

Inspection Reports

The inspection reports (IR) for the appropriate period were reviewed. The first, IR 2012004, involved a non-cited violation of Appendix B, Criteria V, "Instructions, Procedures, and Drawings," after PG&E failed to promptly evaluate the operability of plant structures, systems, and components (SSCs) after a newly discovered local fault line. The IR, dated February 14, 2012 (ADAMS Accession No. ML120450843), indicated a need to update the FSAR Update with the new seismic information. The second, IR 2011005, dated November 13, 2012 (ADAMS Accession No. ML12318A385), involved a Severity Level IV violation where the licensee failed to update the FSAR Update with information describing how plant SSCs meet 10 CFR Part 50,

Appendix A. In both cases, the NRC staff confirmed that Revision 21 of the FSAR Update incorporated the corrective actions to address both these IRs.

Licensee Event Reports

The licensee event reports (LERs) for the appropriate period were reviewed. One LER documented events that listed corrective actions including updating the FSAR Update. This LER, dated June 3, 2013 (ADAMS Accession No. ML13155A238), documented an event in which the licensee identified an unanalyzed condition due to a nonconservative change in the FSAR Update Chapter 15, "Accident Analyses," which would have resulted in a higher received radiological dose received by control room operators during an accident, but would not exceed General Design Criteria 19. The LER described the corrective actions taken to address the event and NRC staff confirmed that Revision 21 of the FSAR Update incorporated the corrective actions described in the LER.

The NRC staff's sampling review of the FSAR Update, Revision 21 included the applicable amendments, IRs, and LERs. The staff did not find any commitments to modify the FSAR Update in its review. Based on the review, the staff concludes that the FSAR Update, Revision 21 was submitted consistent with the requirements in 10 CFR 50.71(e).

Docket Nos. 50-275 and 50-323

DISTRIBUTION:

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LPL4-1 R/F

RidsNrrDorlLpl4-1 Resource

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ADAMS Accession No. ML14022A120

OFFICE	NRR/DORL/LPL4-2/PM	NRR/DORL/LPL4-1/PM	NRR/DORL/LPL4-1/LA	NRR/DORL/LPL4-1/BC	NRR/DORL/LPL4-1/PM
NAME	MOrnak	PBamford	JBurkhardt	MMarkley	PBamford
DATE	6/17/14	6/17/14	6/17/14	6/23/14	6/23/14

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COMMUNICATIONS PLAN

Davis-Besse Nuclear Power Plant
Steam Generators Replacement Inspection

January 2014
Point Of Contact: Atif Shaikh, RIII
630-829-9824

GOALS

- Be prepared to answer public questions on the steam generators replacement inspection
- Be prepared to answer internal questions on the steam generators replacement inspection

KEY MESSAGES

- The NRC's oversight of the steam generator replacement process at Davis-Besse is comprehensive to ensure the safety of the plant and the public.
- Inspections started on December 2, 2013, and these inspections will continue through the actual replacement installation work beginning in February 2014 the post installation tests performed by the licensee, and the plant's subsequent return to power. The results of this NRC inspection will be documented in a publically available report that will be issued by the NRC within 45 days of the conclusion of this inspection.
- NRC inspectors will conduct direct observations along with reviews of records, calculations, and procedures to provide adequate assurance that the plant modifications associated with the replacement steam generators meet applicable regulatory requirements.
- Inspections will be conducted by a team of inspectors with expertise in metallurgy, structural design, heavy loads, radiation protection, security, and other relevant areas.
- NRC inspectors will review the licensee's evaluation of relevant steam generator replacements operating experience (OpEx) to determine whether the licensee has adequately evaluated the OpEx potentially relevant to the Davis-Besse steam generators replacement.
- NRC inspectors will ensure that any safety concerns identified during the inspection are adequately addressed by the licensee.
- The NRC staff invited the public to listen in via conference call to its initial inspection planning meeting with the licensee during which the licensee provided a presentation and NRC staff answered questions from the public. That presentation remains available to the public in the NRC's ADAMS document system (ML No. 13078A249) via the NRC public web site.

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- NRC staff also discussed inspection plans with the public during the last end-of-cycle meeting near the plant and provided information in a meeting with local government officials. In addition, the NRC staff also plans to conduct a webinar to answer questions from the public related to the replacement steam generators at Davis-Besse.

BACKGROUND

Davis-Besse is a Babcock and Wilcox (B&W) designed plant. It is a two loop plant and has two steam generators. The original steam generators are B&W designed once-through steam generators (OTSGs). The new replacement steam generators are also B&W designed OTSGs.

There are two basic types of steam generators used in the United States: recirculating steam generators (RSGs) and OTSGs. RSGs have tubes that are shaped like an inverted "U" while OTSGs have straight tubes. There are currently 59 units in the U.S. with RSGs and 6 units with OTSGs.

All steam generators are designed to limit the possibility of tube-to-tube contact since such a condition can result in the tubes rubbing against each other and leading to tube thinning. The thinning of the tube wall due to the interaction of two structures (e.g., tube-to-tube or tube-to-support) is commonly referred to as tube wear.

In Early 2012, the licensee for San Onofre Nuclear Generating Station Unit 3, which has recirculating steam generators, detected hundreds of tubes with wear attributed to tube-to-tube contact caused by a fluid-elastic instability. Some of these indications were significant including one that leaked during normal operation and led to the plant shutting down. These indications occurred after approximately 20 months of operation. In total, eight tubes were found that did not meet the structural integrity performance criteria specified in the plant's technical specifications. The steam generators at San Onofre were designed and fabricated by Mitsubishi Heavy Industries (MHI).

In early 2010, Three Mile Island, Unit 1 (TMI-1), completed the replacement of both its original OTSGs with new OTSGs that were fabricated by AREVA (France). The first inservice inspection of the TMI-1 replacement steam generators took place in fall 2011. During these inspections at TMI-1, the licensee detected several tubes with indications. A more detailed investigation led the licensee to conclude that these indications were a result of tube wear due to tube-to-tube contact.

In fall of 2013 the licensee for TMI-1 conducted their second inservice inspection of the replacement steam generators. The licensee reviewed their testing data and concluded that tube-to-tube wear was progressing slowly "as predicted" based on first cycle wear data from fall of 2011.

In spring 2006, Oconee, Unit 3 conducted the first inservice inspection of the replacement OTSGs that were installed in 2004. The inservice inspection results revealed widespread wear degradation of the tubing at tube support plant (TSP) locations. Oconee, Units 1 and 2, have also experienced this widespread tube wear degradation at TSP locations following the first cycle of operation since installation in 2004. In spring of 2012 the licensee for Oconee, Unit 3 also detected wear attributed to tube-to-tube contact in the replacement OTSGs. The Oconee replacement OTSGs were designed and fabricated by B&W Canada and are similar to the design of the Davis-Besse replacement OTSGs.

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The licensees for Oconee and TMI evaluated the severity of the tube-to-tube wear indications in their replacement steam generators. These evaluations concluded that the wear indications did not compromise tube integrity (i.e., the tubes could still perform their intended function consistent with their original design and licensing basis). In addition, this tube-to-tube contact did not involve high energy fluid-elastic instability such as that experienced at SONGS. NRC staff reviewed the licensees' evaluations and did not identify any safety issues that would affect plant restart.

Q&As FOR DAVIS-BESSE STEAM GENERATORS REPLACEMENT

1. Will this be a like for like replacement?

No, this will not be a like for like replacement. Although the replacement steam generators (SGs) are manufactured by the same vendor as the original SGs, there are some differences in the design of these replacement SGs. Hence, the licensee is required to perform an evaluation consistent with Section 50.59 of Title 10 to the *Code of Federal Regulations* (10 CFR) for the proposed modifications associated with the replacement SGs!

2. What are the differences between the old and new steam generators?

The differences between the original SGs and the replacement SGs all relate to physical design aspects such as the material, component dimensions, number of tubes per generator, etc. The required design and safety functions of the SG remain the same. The NRC staff will be reviewing the 50.59 analyses supporting the design changes to ensure that plant safety is not impacted by the changes and to evaluate licensee's conclusions regarding whether NRC approval is needed for the changes.

3. Can you explain the 50.59 process?

The 50.59 process involves implementation of the requirements set forth in 10 CFR 50.59, a federal regulation. Essentially, whenever a licensee decides to implement a physical change to its facility or change how the facility is operated, used or controlled, including changes to safety analyses or documentation (e.g., a calculation, evaluation, methodology), then the 50.59 regulation allows a licensee to implement that change without prior NRC approval only if the change meets criteria pertaining to the safety implications of the proposed change. Generally, if a change would place the plant outside of the safety boundaries established by the NRC and reflected in the plant's licensing basis (e.g., NRC regulations, licensing documents, and plant safety analyses report), then prior NRC approval would be needed.

4. Can you explain the license amendment process?

In general, the license amendment application review process has 5 steps: 1) Conducting an acceptance review to determine if there is sufficient technical information for the NRC staff to begin a detailed technical review of the application; 2) Publishing a *Federal Register* notice that describes the application and gives members of the public an opportunity to comment on the proposed determination of No Significant Hazards Consideration (NSHC) and request permission to be a party in a hearing; 3) Conducting a technical review to determine the safety of, and the environmental impacts of, the proposed amendment, including, if needed, sending requests for additional information (RAIs) to obtain additional information needed to make an informed regulatory decision; 4) Completing the NRC staff's safety evaluation (SE), which provides the technical,

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safety, and legal basis for the NRC's decision on the amendment application; and 5) If the amendment is approved, issuing the amendment and publishing a *Federal Register* notice that indicates when the amendment issued and whether the NRC staff made a final NSHC determination.

5. How do 50.59 analyses and license amendments assure safety?

Both processes provide assurance that changes at operating reactors are not made until the safety significance of the change is considered. As noted above, the 50.59 process can lead to a determination that a 50.90 license amendment application, and thus prior NRC approval, is required.

6. What changes would require a license amendment?

If a proposed change is not consistent with a technical specification or places the plant outside of the safety boundaries established in the plant's licensing basis, then the change would require a license amendment.

7. Why not require a license amendment for the whole replacement?

NRC inspectors review samples of licensee 50.59 evaluations and decisions during the SG replacement inspections. If the Agency determines that a license amendment is required, the Agency can take appropriate enforcement action.

8. Are any license amendments needed for the SG replacements at Davis-Besse?

Davis-Besse submitted a license amendment request for Technical Specifications (TS) changes related to the replacement steam generators. The NRC staff is currently reviewing this amendment request.

9. Have any concerns been raised regarding the steam generator replacement?

A request for hearing and petition to intervene on the Technical Specification (TS) license amendment request was filed in May 2013. The petitioners challenged the 10 CFR 50.59 analyses on the steam generators replacement, contending that the steam generator replacement activities required an additional license amendment request. On August 12, 2013, the Atomic Safety Licensing Board (ASLB) denied the petition. The ASLB ruled that petitioners cannot challenge 10 CFR 50.59 analyses done to support steam generator replacement activities in a proceeding on a license amendment request to change TS related to operation with the new steam generators replacement. The ASLB also ruled that a challenge to adequacy of 10 CFR 50.59 analyses for replacement of the steam generators can only be made by filing a petition under 10 CFR 2.206.

10. Will the NRC staff conduct an inspection concerning the steam generator replacement activities?

Yes. The NRC staff will inspect the licensee's SG replacement activities during inspections which began on December 2, 2013. During the inspection, the NRC staff will review 10 CFR 50.59 analyses done to support the steam generator replacement, as well as monitor steam generator replacement activities. An inspection report will be issued to document the results of the NRC staff's review.

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- 11. Will the NRC's review of the new steam generators/50.59 evaluations be complete before the plant can start up with the new steam generators?**

It is the licensee's responsibility to ensure changes associated with the new steam generators are thoroughly evaluated and are safe and implemented appropriately. While the NRC staff will complete its inspection review as expeditiously as possible, we can't guarantee we will reach final conclusions prior to plant restart. The NRC staff will take the time it needs to do a thorough and rigorous inspection and to arrive at supportable conclusions. However, if at any time the NRC staff concludes that the changes are not safe, the NRC would take appropriate enforcement action, including ensuring the plant stays in or is placed in a safe condition.

- 12. Will there be an NRC inspection report for the DB steam generators? Will the inspection results be publicly available before restart?**

The inspection results for the SG replacement inspection will be documented in a publicly available NRC inspection report which will be issued within 45 days after the completion of the inspection. The NRC inspection is extensive and includes evaluation of licensee activities that occur throughout the replacement outage and subsequent startup. Hence, the inspection report will not be available prior to startup.

- 13. Has the NRC incorporated lessons learned from previous SG replacements in inspections for the Davis-Besse replacements?**

Recent operating experience at facilities where SGs have been replaced is being incorporated (or was incorporated) into the inspection effort for the Davis-Besse SG replacements. Region III staff closely coordinates with NRC headquarters to identify areas for a rigorous review of 50.59 evaluations. For the Davis-Besse steam generator replacement inspection, the NRC will be reviewing the licensees' evaluation of previous operating experience, key design differences between original and replacement steam generators, and if they exist, design change challenges discussed between the licensee and its vendor.

- 14. Has Davis-Besse licensee reviewed the SONGS or other SG replacement operating experience such as at TMI-1 and Oconee Unit 3 in preparation for their steam generator replacements?**

Yes, Davis-Besse described in a public meeting how they have considered the SONGS, TMI, and Oconee SG tube degradation operating experience in their steam generator design and replacement activities. The NRC inspectors will review this information and the 50.59 evaluations supporting these design modifications as part of the SG replacement inspection activities.

- 15. Are these new steam generators considered an experimental design?**

No, these new replacement SGs are not considered an experimental design. They are similar in basic design to the original SGs. There is also operating experience available regarding replacement steam generators of a similar design as those being installed at Davis-Besse. The NRC inspectors will be reviewing the licensee's evaluation of the operating experience available as it pertains to the specific design.

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16. What are the main differences between the steam generators at Davis-Besse and SONGS?

- The Davis-Besse and SONGS SGs are different designs. The steam generators at SONGS are recirculating steam generator design. They are designed for a Combustion Engineering plant which requires larger steam generators, averaging close to 9,000 tubes per steam generator. The SONGS SGs were manufactured by MHI and are one of the largest steam generators used in the industry. The SONGS replacement SGs were modeled for vibration using MHI's proprietary modeling code.
- The Davis-Besse Steam generators are a completely different design from SONGS in that they are once through steam generators (they do not have a U-bend tube region, instead they consist of straight tubes) and were manufactured by B&W Canada. The Davis-Besse replacement SGs were modeled for vibration using an industry accepted EPRI modeling code.

17. Will DB cut a hole in the shield building for these replacement steam generators? What impact will that cutting and opening process have on the existing shield building cracking?

In order to remove the old steam generators and install the new steam generators, the licensee will cut another hole in the reinforced concrete shield building. The hole will be located entirely within the boundaries of a previous hole that was cut for replacement of the reactor pressure vessel closure head, and hence will be in new concrete that was poured in 2012. Thus, the licensee does not expect there to be any impact on previously identified cracking in the older portions of the shield building wall.

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

September 11, 2014

MEMORANDUM TO: Wayne Walker, Chief
Division of Reactor Projects, Branch A

FROM: Multiple Addressees, as listed below

SUBJECT: COMMUNICATIONS PLAN – DIABLO CANYON POWER PLANT
TOPICS OF INTEREST

The purpose of this memo is to transmit and request comments/concurrence on the enclosed Communications Plan for Diablo Canyon Power Plant (DCPP). The enclosed document is based on several iterations of informal communication plans, Q&A documents, and responses to congressional questions developed primarily by Region IV, NRR, OPA, and OCA over the last several years.

This communication plan describes the methods and resources that NRC staff will use to communicate with internal and external stakeholders regarding the DCPP seismic history and ongoing seismic evaluations being conducted in response to the Japan Lessons Learned Near-Term Task Force recommendations. Additionally, as applicable to current issues of interest to DCPP stakeholders, this communications plan integrates key messages related to spent fuel/dry cask storage and waste confidence issues (primarily by referencing other active communication plans).

This revision also incorporates Q&As for the most recent issues of concern including the licensee's AB-1632 Report to the State of California and the "Sewell Report."

Once finalized, the Communications Plan will be posted on the OEDO Communications website for use by the communications team and more broadly across the agency as necessary.

Most of those on concurrence have each provided significant input to iterations of this document (or documents from which this Plan was developed). As such, we are requesting your review/comments/concurrence in the next few days (due by COB, Monday, September 15). Please forward your comments/concurrence on the document to Theresa Buchanan (Theresa.Buchanan@nrc.gov) and/or ph: (817) 200-1503) of my staff.

The concurrence block noted on the next page will be used to document your concurrence on the enclosed Communications Plan.

Enclosure:
As stated

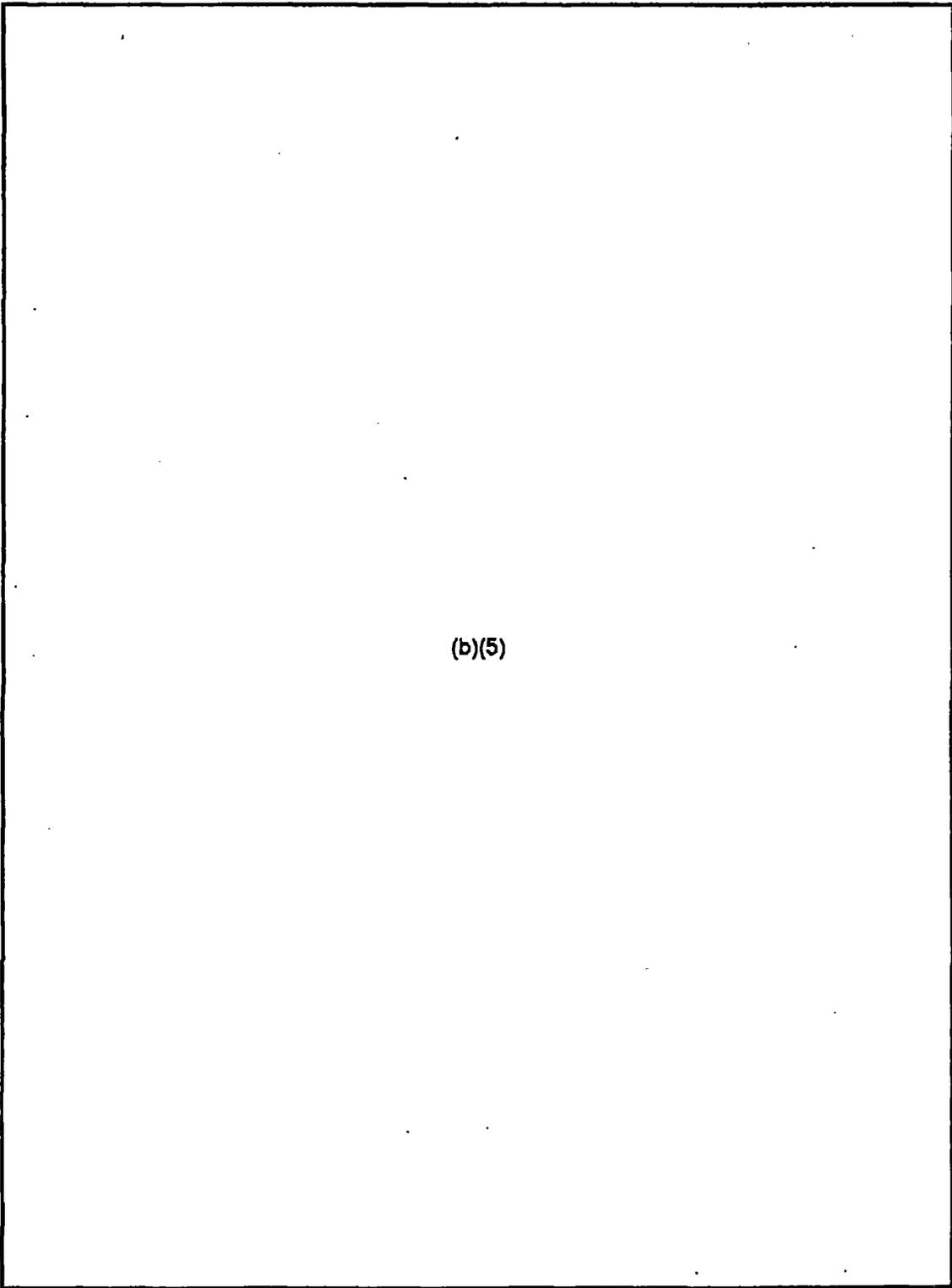
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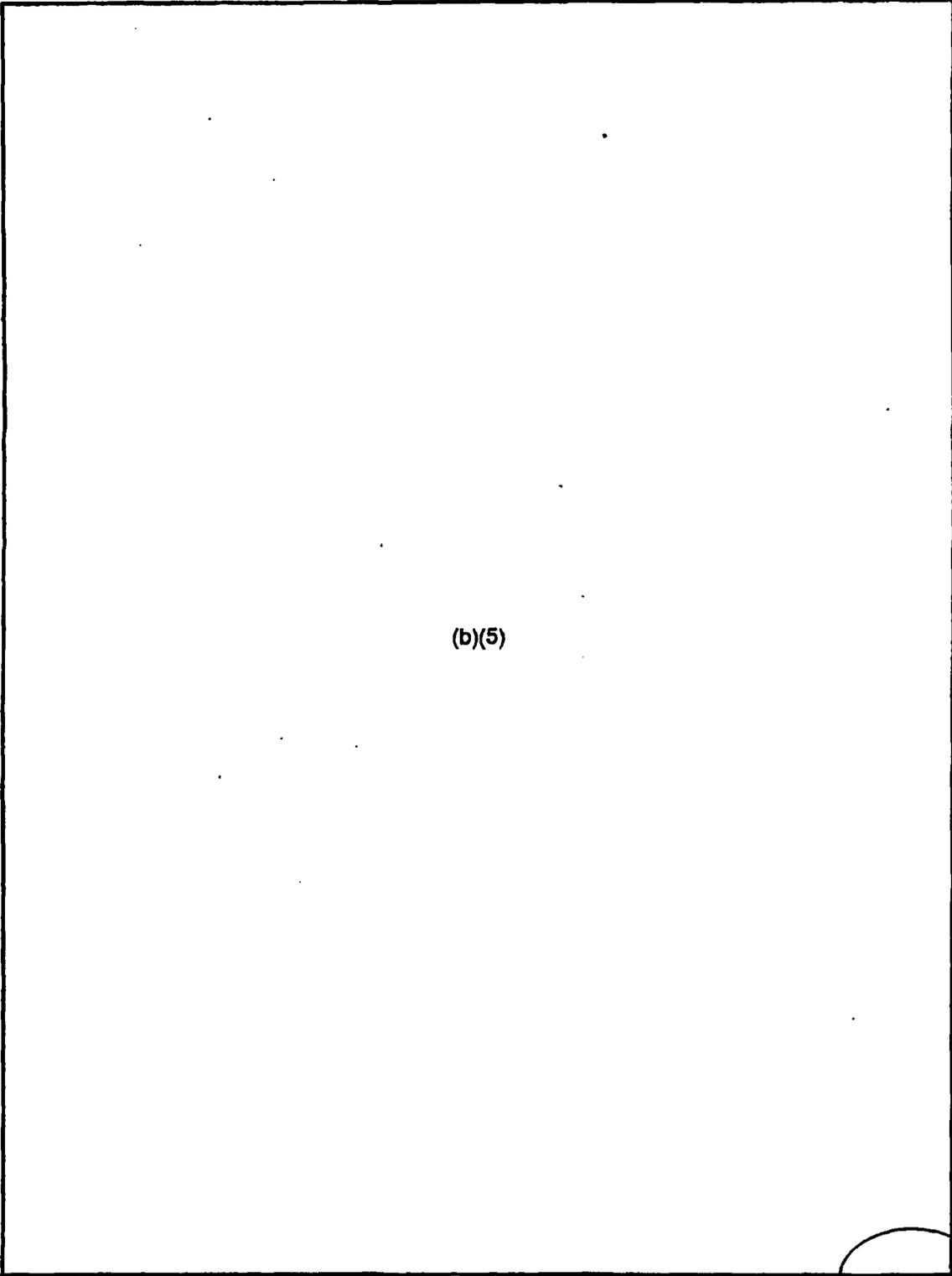
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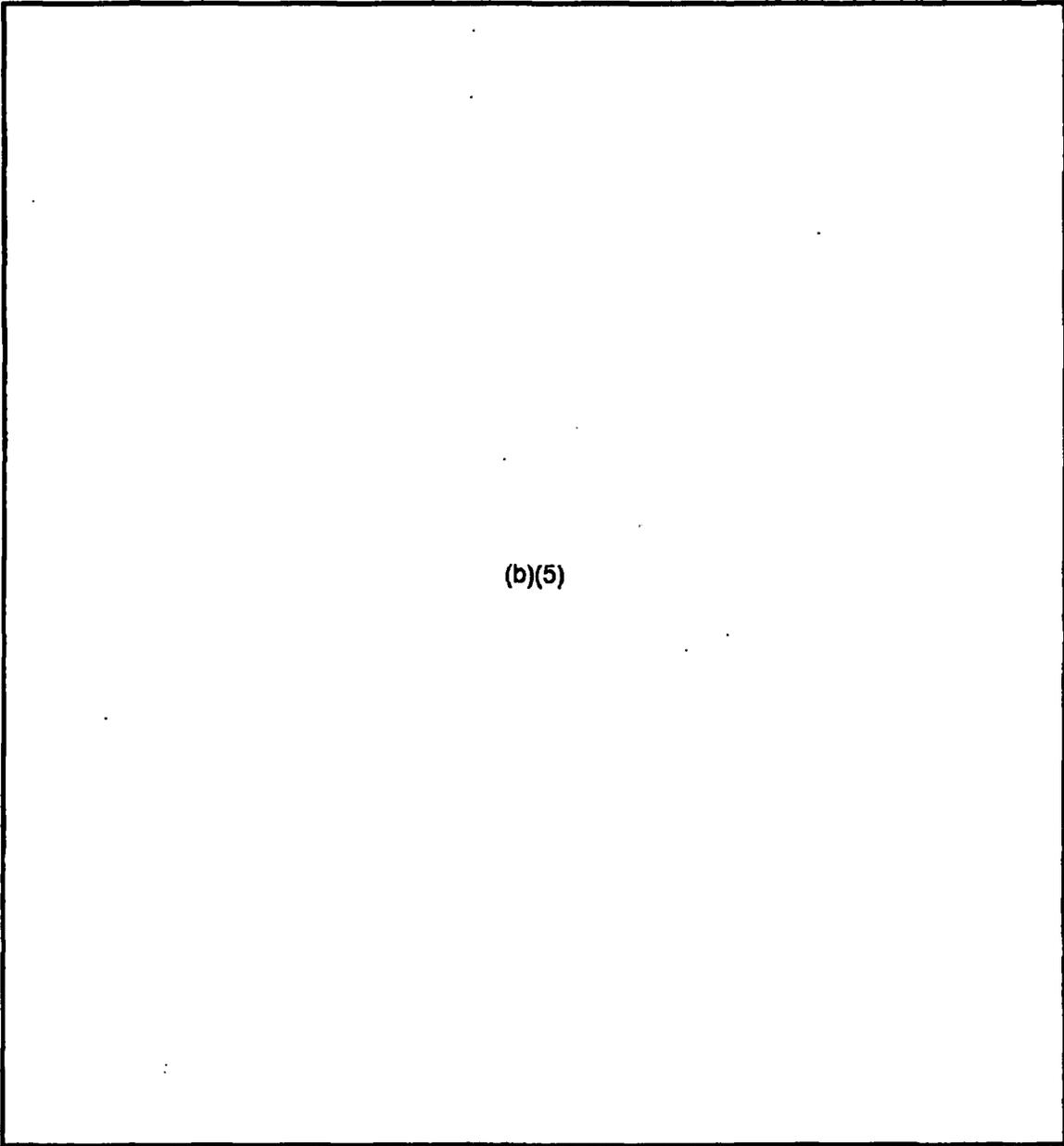
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FREEDOM OF INFORMATION TEAM

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November 19, 2014

Dr. Allison M. Macfarlane, Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Macfarlane:

On behalf of the Freedom of Information Team, I respectfully ask the Commission to revisit and revise the information withholding policies approved in Staff Requirements Memorandum (SRM) dated November 9, 2004, for SECY-04-0191 dated October 19, 2004.

In response to the tragic events of 9/11, the NRC staff proposed a framework for withholding information from the public that might be useful to adversaries attempting radiological sabotage at NRC-licensed facilities. The Commission approved the staff's proposal. In the second paragraph of the SRM, the Commission directed that "the staff should move expeditiously to complete the necessary determinations and restore public access to the appropriate documents."

Since that time, the NRC and the nuclear industry have developed a system for withholding the proper information. For example, the NRC released Regulatory Issue Summary RIS-05-026, "Control of Sensitive Unclassified Nonsafeguards Information Related to Nuclear Power Reactors;" RIS-05-031, "Control of Security-Related Sensitive Unclassified Non-Safeguards Information Handled by Individuals, Firms, and Entities Subject to NRC Regulation of the Use of Source, Byproduct, and Special Nuclear Material;" RIS-07-04, "Personally Identifiable Information Submitted to the U.S. Nuclear Regulatory Commission;" and RIS-12-03, "Reintegration of Security into the Reactor Oversight Program Assessment Program." The NRC also revised 10 CFR 2.390 to clarify what information must be withheld.

The nuclear industry and the NRC have operating experience using this system. Today, there is a common understanding of what information needs to be withheld along with the appropriate means for withholding it.

It is now time to restore public access to the appropriate documents while retaining necessary protection against inappropriate disclosures.

Specifically, we ask that the framework in Attachment 1 to SECY-04-0191 profiling all incoming documents from plant owners about fire protection and emergency planning as nonpublic be reversed. All incoming documents about fire protection and emergency planning should be profiled as public.

Plant owners now have clarity from the NRC regarding the nature and context of information that must be withheld from the public. Plant owners now also have an established and well-used process for submitting documents containing such information to the NRC so that the information is appropriately withheld. Thus, documents about fire protection or emergency planning containing sensitive information will be submitted by plant owners per 10 CFR 2.390 and collateral processes, obviating the need for blanket withholding of all fire protection and emergency planning documents.

We look forward to the NRC restoring public access to appropriate fire protection and emergency planning information.

Sincerely,

A handwritten signature in black ink that reads "David A. Lochbaum". The signature is written in a cursive style with a large initial "D".

David Lochbaum
Director, Nuclear Safety Project
Union of Concerned Scientists
PO Box 15316
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December 17, 2014

Hubert Bell, Inspector General
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Mr. Bell:

On behalf of the Union of Concerned Scientists, I respectfully ask the Office of the Inspector General to investigate whether the Nuclear Regulatory Commission violated federal statutes and/or federal regulations with the information withholding policy approved in Staff Requirements Memorandum (SRM) dated November 9, 2004, for SECY-04-0191 dated October 19, 2004.

Among other things, the policy authorized the NRC staff to withhold all documents it received from plant owners involving fire protection and emergency planning. In the text on page 7 of the attachment to SECY-04-0191, the NRC staff recognized that most of these incoming fire protection and emergency planning records would not likely contain sensitive information that needed withholding from the public. Yet the NRC staff recommended, and a majority of the Commission approved, withholding these incoming records.

Earlier this year, I submitted requests under the Freedom of Information Act for fire protection and emergency planning records dated October 1, 2004, or later that were not already publicly available. The fire protection records provided to me in response to my FOIA requests are mostly contained in the October 3, 2014, folder in the NRC's Agencywide Document Access and Management System (ADAMS).

No documents were withheld in their entirety by the NRC when responding to my FOIA requests. And I have not yet located a single redaction in any of the fire protection records released by the NRC staff in response to my FOIA requests.¹ Thus, there was no justifiable basis for withholding these records from the public.

¹ Some of the emergency planning records released in response to my FOIA requests had telephone numbers and similar information redacted, but those redactions represented considerably less than one percent of the material in the documents.

But even if the tragic events of 9/11 warranted error on the side of caution, a policy decision cannot trump or negate federal statutes and regulations. This policy with regard to fire protection and emergency planning records seems to have authorized practices that violate federal statutes and regulations. Several examples that strongly suggest that NRC violated federal statutes and regulations are summarized in the following table.

Table 1: Some of the Fire Protection Records Withheld by the NRC				
ADAMS ML	Document	Document Date	Date Made Public	Comment
ML060300439	Response to NRC request for additional information regarding fire suppression exemption request at Turkey Point Units 3 and 4	01/13/2006	10/03/2014	The NRC approved the exemption on 09/27/2006. The approval (ML062160387) was made public on 10/02/2006. Lack of access to the exemption request prevented or significantly impaired the public's ability to oppose it.
ML062010140	Response to NRC request for additional information regarding fire suppression exemption request at Turkey Point Units 3 and 4	07/12/2006	10/03/2014	The NRC approved the exemption on 09/27/2006. The approval (ML062160387) was made public on 10/02/2006. Lack of access to the exemption request prevented or significantly impaired the public's ability to oppose it.
ML063200100	License amendment request for fire protection requirements at Browns Ferry Units 1, 2, and 3	11/15/2006	10/03/2014	The NRC issued the amendment on 04/25/2007. The amendment (ML071160431) was made public on 05/17/2007. <u>Notice</u> of the pending amendment was published in the <i>Federal Register</i> on 04/05/2007. Lack of access to the amendment request prevented or significantly impaired the public's ability to oppose it.
ML082590007	Supplement to license amendment request for deviation from fire protection requirements at South Texas Project Units 1 and 2	09/05/2008	10/03/2014	The NRC issued license amendments on 09/16/2009. The amendment (ML082280465) was made public on 09/24/2008. <u>Notice</u> of the pending amendments was published in the <i>Federal Register</i> on 08/25/2009. Lack of access to the deviation request prevented or significantly impaired the public's ability to oppose it.
ML093350537	Response to NRC request for additional information regarding requested deviation from fire protection regulations at South Texas Project Units 1 and 2	11/20/2009	10/03/2014	The NRC issued license amendments on 09/16/2009. The amendment (ML082280465) was made public on 09/24/2008. <u>Notice</u> of the pending amendments was published in the <i>Federal Register</i> on 08/25/2009. Lack of access to the deviation request prevented or significantly impaired the public's ability to oppose it.

Table 1: Some of the Fire Protection Records Withheld by the NRC				
ADAMS ML	Document	Document Date	Date Made Public	Comment
ML090570050	Request for exemption from fire protection regulations at FitzPatrick	02/18/2009	10/03/2014	The NRC approved the exemption on 03/11/2010. The approval (ML100340670) was made public on 03/12/2010. Lack of access to the exemption request prevented or significantly impaired the public's ability to oppose it.
ML090960214	Response to NRC request for additional information regarding fire protection regulation exemption request at FitzPatrick	03/30/2009	10/03/2014	The NRC approved the exemption on 03/11/2010. The approval (ML100340670) was made public on 03/12/2010. Lack of access to the exemption request prevented or significantly impaired the public's ability to oppose it.
ML091320440	Licensee event report (LER) for deficiencies in Appendix R fire response plan at Point Beach Unit 1	05/11/2009	10/03/2014	While LERs do not constitute licensing action requests (e.g., license amendments, exemptions, deviations, etc.), they describe violations of regulatory requirements, either hardware or process related. When available, LERs could be cited by the public in opposing licensing requests involving hardware and process changes. By withholding all fire protection LERs, the NRC significantly hampered the public's ability to evaluate fire protection program adequacy and contest perceived shortcomings.
ML103570032	Licensee event report (LER) for non-compliance manual actions in fire response plans at Monticello	12/22/2010	10/03/2014	
ML093641067	License amendment request to use fire-resistive electrical cable at Wolf Creek	12/16/2009	10/03/2014	The NRC prepared its finding of no significant hazards for the Federal Register on 02/25/2010. The notice (ML100560391) was made public on 03/15/2010. The NRC issued the amendment on 09/30/2010. The amendment (ML102560498) was made public on 10/01/2010. Lack of access to the amendment request prevented or significantly impaired the public's ability to oppose it.

By withholding license amendment requests, the NRC seems to have violated 10 CFR 50.91, Notice for public comment; State consultation. Even when the agency publishes notices about the requests in the *Federal Register*, withholding the underlying request rendered that opportunity for public comment meaningless. The public lacked viable means to contest "secret" requests.

10 CFR 50.91 also provides opportunities for States to review proposed licensing actions and comment on or oppose them. The NRC's information withholding policy may also have infringed on States' abilities to conduct their consultation function. We request that OIG's investigation also determine whether the NRC's policy adversely affected the States' role in licensing actions.

The NRC's information withholding policy would also seem to violate the spirit if not the letter of the Administrative Procedure Act. This federal statute requires agencies like the NRC to provide for public participation in rulemaking processes. While the fire protection and emergency planning records withheld by the NRC may not directly involve rulemaking, there most certainly is an indirect nexus. When plant owners requested exemptions from NRC's regulations promulgated via a public rulemaking process, the NRC deprived the public of its right to contest how the APA-compliant requirements were applied to the licensed nuclear facilities in their communities. And when the NRC pursued rulemaking, as it is and will be doing regarding emergency planning in response to both Fukushima's lessons and numerous reactor decommissionings, the NRC's withholding of the past decade's worth of emergency planning records essentially turned the APA-compliance rulemakings into a mockery of meaningful public participation. An oft-cited adage states that "information is power." The NRC's information withholding practice rendered the public powerless to participate in the agency's rulemaking proceedings.

Along with several other NGO representatives, I met with the NRC staff about document classification and information redaction policies on October 7, 2014, in a public meeting attended by some members of the OIG staff. We followed up with a letter to Chairman Macfarlane dated November 19, 2014, requesting the Commission to reverse the policy for withholding all incoming records involving fire protection and emergency planning. We have reason to believe the information withholding policy will be changed in the near future.

While we are hopeful that the NRC staff will soon cease blanket withholding of incoming fire protection and emergency planning records, that will solve only part of the problem. We respectfully request that OIG investigate the policy to address the remainder of the problem. Even if the information withholding policy was justifiable, policy cannot violate federal statutes and regulations. Thus, the policy adopted by the NRC in late 2004 should not have resulted in requests for license amendments, deviations, and exemptions of fire protection regulatory requirements being withheld from the public.

The information withholding policy adopted by the NRC in late 2004 attempted to better protect the public's safety. In applying the policy, the NRC undermined the public's rights. Thus, the NRC's good intentions were offset by the unintended consequences. The OIG's investigation would identify those consequences as well as factors that could have or should have enabled maximum benefits to be derived with minimal consequences. The report on the OIG's investigation can help the NRC staff implement process fixes that better maintain the delicate balance between the legitimate need to withhold some information and the public's right to know the rest of the information.

Sincerely,

A handwritten signature in black ink that reads "David A. Lochbaum". The signature is written in a cursive, flowing style.

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No More Fukushimas; No More Fort Calhouns

HIGHLIGHTS

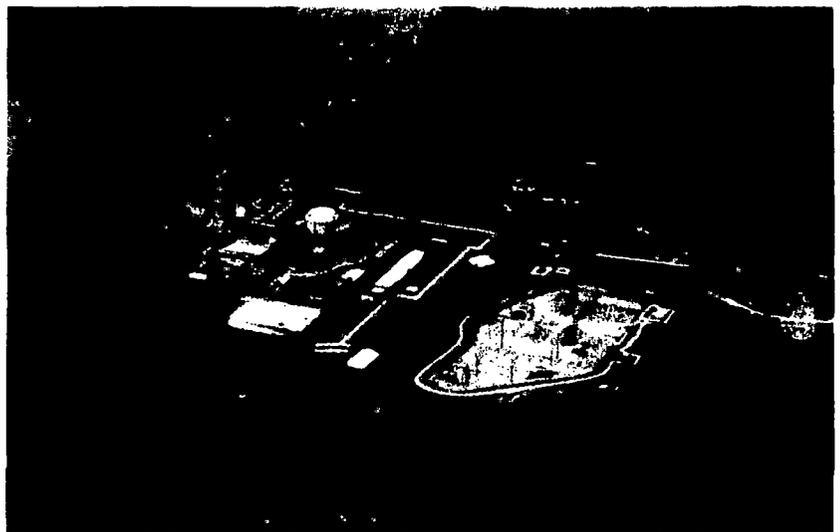
On April 9, 2011, operators shut down the reactor at the Fort Calhoun nuclear plant in Nebraska for a routine refueling outage. But myriad safety problems discovered during the outage—many dating back to when the plant was constructed in the late 1960s and early 1970s—prevented the reactor from restarting for two and a half years. The U.S. Nuclear Regulatory Commission (NRC), which oversees the nation's nuclear power plants, needs to determine how its inspectors and the plant owner missed—or dismissed—numerous longstanding safety problems for years despite thousands of hours of inspections. It should appoint a task force to recommend changes to the NRC's inspection and oversight efforts, and then implement these changes as quickly as possible.

Two significant nuclear power safety events occurred in the spring of 2011. On March 11, an earthquake and the tsunami it spawned caused the meltdown of three reactors at the Fukushima Daiichi nuclear plant in Japan. Less than a month later, on April 9, operators shut down the reactor at the Fort Calhoun nuclear plant in Nebraska for a routine refueling outage. But myriad safety problems discovered during the outage—many dating back to when the plant was constructed in the late 1960s and early 1970s—prevented the reactor from restarting for two and a half years.

Following the first event, the U.S. Nuclear Regulatory Commission (NRC), which oversees the safety of the nation's nuclear power plants, formed a task force that examined the Fukushima accident and identified more than 30 lessons that could reduce vulnerabilities in the United States. The NRC ordered plant owners to implement specific safety upgrades and is pursuing additional measures to further reduce vulnerabilities.

Following the second event, the NRC made no such effort to examine the Fort Calhoun situation. It failed to identify lessons that would enable it to detect safety violations sooner and correct them before they could accumulate to epidemic proportions requiring years to fix—or worse, contribute to an American Fukushima.

Fort Calhoun received its first operating license in 1973, and the NRC relicensed the plant in 2003 to continue operating for as long as 20 more years. Neither of these licensing efforts, nor the tens of thousands of hours the NRC spent inspecting Fort Calhoun, led the agency to discover any of these many safety problems.



U.S. Army Corps of Engineers

For two weeks in June 2011, flooding on the Missouri River turned Nebraska's Fort Calhoun nuclear power plant into an island. The plant had already been shut down for myriad safety problems—many dating back to its construction in the late 1960s and early 1970s.

Fort Calhoun's shutdown was not an isolated incident: its two-and-a-half-year outage marked the fifty-second time a U.S. reactor remained shut down for longer than a year so the owner could correct accumulated safety problems (see the table). In each of those cases, the reactor had been operating with serious safety problems prior to the shutdown—problems that made an accident more likely. Moreover, these 52 outages have cost ratepayers and shareholders billions of dollars.

The NRC's goal of preventing a Fukushima-scale accident in this country must be accompanied by the goal of preventing another prolonged safety outage like that at Fort Calhoun.

The fact that there have been 52 year-plus outages demonstrates that U.S. reactors often operate while violating numerous safety requirements. These safety violations not only make reactors more vulnerable to accidents, but also make them more likely to experience a Fukushima-scale disaster in the event of an accident.

By closing the gap between what its safety regulations require and what U.S. plant owners actually do, the NRC would not only prevent another Fort Calhoun, it would also strengthen its post-Fukushima reforms. And because year-plus outages for safety fixes are costly, preventing another

Year-Plus Nuclear Reactor Outages

Reactor	Date Outage Began	Date Outage Ended	Outage Length (years)
Fermi Unit 1	10/5/66	7/18/70	3.8
Palisades	8/11/73	10/1/74	1.1
Browns Ferry Unit 2	3/22/75	9/10/76	1.5
Browns Ferry Unit 1	3/22/75	9/24/76	1.5
Surry Unit 2	2/4/79	8/19/80	1.5
Three Mile Island Unit 1	2/17/79	10/9/85	6.6
Turkey Point Unit 3	2/11/81	4/11/82	1.2
San Onofre Unit 1	2/26/82	11/28/84	2.8
Nine Mile Point Unit 1	3/20/82	7/5/83	1.3
Indian Point Unit 3	3/25/82	6/8/83	1.2
Oyster Creek	2/12/83	11/1/84	1.7
St. Lucie Unit 1	2/26/83	5/16/84	1.2
Browns Ferry Unit 3	9/7/83	11/28/84	1.2
Pilgrim	12/10/83	12/30/84	1.1
Peach Bottom Unit 2	4/28/84	7/13/85	1.2
Fort St. Vrain	6/13/84	4/11/86	1.8
Browns Ferry Unit 2	9/15/84	5/24/91	6.7
Browns Ferry Unit 3	3/9/85	11/19/95	10.7
Browns Ferry Unit 1	3/19/85	6/12/07	22.2
Davis-Besse	6/9/85	12/24/86	1.5
Sequoyah Unit 2	8/22/85	5/13/88	2.7
Sequoyah Unit 1	8/22/85	11/10/88	3.2
Rancho Seco	12/26/85	4/11/88	2.3
Pilgrim	4/11/86	6/15/89	3.2
Peach Bottom Unit 2	3/31/87	5/22/89	2.1
Peach Bottom Unit 3	3/31/87	12/11/89	2.7
Nine Mile Point Unit 1	12/19/87	8/12/90	2.6

Reactor	Date Outage Began	Date Outage Ended	Outage Length (years)
Surry Unit 2	9/10/88	9/19/89	1.0
Palo Verde Unit 1	3/5/89	7/5/90	1.3
Calvert Cliffs Unit 2	3/17/89	5/4/91	2.1
Calvert Cliffs Unit 1	5/5/89	10/4/90	1.4
FitzPatrick	11/27/91	1/23/93	1.2
Brunswick Unit 2	4/21/92	5/15/93	1.1
Brunswick Unit 1	4/21/92	2/11/94	1.8
South Texas Project Unit 2	2/3/93	5/22/94	1.3
South Texas Project Unit 1	2/4/93	2/25/94	1.1
Indian Point Unit 3	2/27/93	7/2/95	2.3
Sequoyah Unit 1	3/2/93	4/20/94	1.1
Fermi Unit 2	12/25/93	1/18/95	1.1
Maine Yankee	1/14/95	1/18/96	1.0
Salem Unit 1	5/16/95	4/20/98	2.9
Salem Unit 2	6/7/95	8/30/97	2.2
Millstone Unit 2	2/20/96	5/11/99	3.2
Millstone Unit 3	3/30/96	7/1/98	2.3
Crystal River Unit 3	9/2/96	2/6/98	1.4
Clinton	9/5/96	5/27/99	2.7
LaSalle County Unit 2	9/20/96	4/11/99	2.6
LaSalle County Unit 1	9/22/96	8/13/98	1.9
D.C. Cook Unit 2	9/9/97	6/25/00	2.8
D.C. Cook Unit 1	9/9/97	12/21/00	3.3
Davis-Besse	2/16/02	3/16/04	2.1
Fort Calhoun	4/9/11	12/21/13	2.7

SOURCE: UPDATED FROM LOCHBAUM 2006.

These year-plus outages demonstrate that U.S. reactors often operate while violating safety requirements.

Fort Calhoun would save ratepayers and shareholders money. Preventing financial meltdowns and avoiding reactor meltdowns is a goal too good to pass up.

Just as it did for Fukushima, the NRC must formally examine the Fort Calhoun case, identify the lessons that should be learned, and make appropriate changes to its oversight process to reduce the likelihood that safety problems remain undetected—and uncorrected—for months or years.

Safety Problems at Fort Calhoun

In a presentation to the NRC on March 27, 2013, Fort Calhoun's owner reported that 20,000 tasks had been completed between November 2012 and February 2013 and had approximately 5,000 other tasks to do before it could restart the reactor (OPPD 2013). While many of these tasks involved preventive maintenance and routine inspections, some entailed correcting serious safety problems.

When a safety problem's severity rises above a fairly high threshold, the plant owner must report it to the NRC. The

safety problems reported by Fort Calhoun's owner during the prolonged outage included:

- **Inadequate flood protection.** NRC inspectors had already determined in 2010 that measures designed to protect safety equipment in the auxiliary building and at the intake structure from external flooding had not been adequately implemented as specified by the original safety studies. Workers identified additional deficiencies during the outage (Bannister 2011a). Furthermore, when the plant's owner replaced the original security system in 1985, it left portions of the old system in place. Although the owner sealed the intake structure's walls up to the calculated flooding level to protect vital cooling water pumps inside, it failed to seal areas where the old security system's cables penetrated the intake structure. As a result, the safety-related water pumps could have been damaged by flooding (Bannister 2011b).
- **Missing safety system parts.** Fort Calhoun's owner installed 32 seismically qualified General Electric electrical relays in safety systems at the plant. Workers tested seven of these relays and three failed the tests. Workers then discovered the cause was a missing part. Further inquiries concluded that the relays were most likely missing this part when they were installed during the plant's original construction (Cortopassi 2013a).
- **Inadequate earthquake protection.** Workers found that transmitters used to monitor reactor cooling water pressure had been installed on an instrument rack that was not designed to adequately protect them from



Nuclear Regulatory Commission/courtesy of Omaha Public Power District

In March 2013, Fort Calhoun's owner reported that it had completed 20,000 tasks required by the NRC before the reactor could be restarted—but still had approximately 5,000 more to do. Some of the tasks entailed correcting serious safety problems.

movement during an earthquake. The owner informed the NRC that, "During a seismic event, the excessive weight of these instrument racks could cause the racks to fail," resulting in a reactor cooling water leak that could not be isolated, increasing the risk of nuclear core damage (Bannister 2012a).

- **Vulnerability to high-speed debris.** In the event of a tornado, debris propelled by high winds can disable essential safety equipment. Workers identified numerous potential sources of such debris, including removable hatches on the intake structure, the exhaust stack for the steam-driven auxiliary feedwater pump, the vent stack and fill line for the emergency diesel generator's fuel oil tanks, the cable pull boxes for the raw water pumps, and the exhaust stacks for the emergency diesel generators (Cortopassi 2013b).
- **Overloaded backup power source.** Workers discovered that, in a situation where one of the two emergency diesel generators was unavailable, more equipment would be connected to the remaining emergency diesel generator than that generator could supply during certain types of accidents. The system designed to disconnect non-essential equipment from the emergency diesel generator during an accident would not perform properly during these types of accidents, and the overloaded generator could fail to function (Bannister 2012b).
- **Inadequately tested backup power source.** In 1990, workers revised a test procedure for the emergency diesel generators and no longer checked whether the plant's fuel oil transfer pumps would automatically start and send fuel from the onsite storage tank to the generators. This check, required by the reactor's operating license, had not been performed for nearly a quarter of a century (Bannister 2012c).
- **Overloaded support beam.** Workers discovered that some of the support beams for the containment structure were not properly designed to handle the weight they supported (Bannister 2012d).
- **Inadequate piping qualifications.** Workers discovered that chemical and volume control system (CVCS) piping had not been properly qualified for the stresses it could experience during its lifetime. Among other factors, the qualification was required to consider fatigue cycles—that is, the number of times the water carried by the piping goes from ambient temperature to reactor operating temperature and back again. These temperature changes cause the metal pipe walls to expand and shrink, which wears the piping out faster. Examination of two-inch-diameter socket-welded fittings in the CVCS found that

this piping failed to comply with the piping code and therefore was not properly qualified (Cortopassi 2012).

- **Improperly grounded reactor protection system.** Workers discovered that the voltage in the reactor protection system—which detects unsafe conditions and initiates automatic safety system actions—was nearly 10 times higher than the design allowed. As a result, the system might not initiate the automatic responses the plant's safety studies assumed would happen. Even worse, this unacceptable condition had been previously identified and reported multiple times since 1993 but never corrected (Reinhart 2011).

Workers discovered that some of the support beams for the containment structure were not properly designed to handle the weight they supported.

- **Safety pumps operated outside vendor limits.** Workers determined that, since 1996, the motors for the component cooling water (CCW) pumps had been operating under conditions beyond those recommended by the manufacturer. The CCW system supplies cooling water to reactor components that could contain radioactive water (for example, reactor coolant pump lube oil and seal coolers, containment air cooling units, spent fuel pool heat exchanger). Motors operated outside the manufacturer's limits could fail during an accident (Bannister 2012c).

This list summarizes only a handful of the safety problems that eluded detection and correction at Fort Calhoun for years, subjecting the surrounding population to undue elevated risk. The plant's problems covered a range of engineering disciplines: electrical, mechanical, civil, and instrument and controls. They fell into several major safety areas, including fire protection, flood protection, and seismic design. In other words, the problems were programmatic and pervasive, not isolated to a single plant department.

The most recent of these problems dated to 1996, and many dated back to when the plant was originally built. Thus, there were dozens, and sometimes hundreds, of opportunities for workers and NRC inspectors to detect them before 2010.



Senior executives from the Fort Calhoun plant briefed NRC staff and commissioners several times (including here in June 2013) before they were allowed to restart the reactor.

The NRC's Reactor Oversight Process

In May 1997 the Government Accountability Office (GAO, then called the General Accounting Office) issued a report titled *Nuclear Regulation: Preventing Problem Plants Requires More Effective NRC Action* (GAO 1997). At the time, both reactors at New Jersey's Salem nuclear plant were mired in year-plus outages and the NRC had identified 43 problems the owner had to correct before it could safely restart either unit. The GAO report stated that the NRC knew about 38 of the 43 problems before the Salem reactors were shut down, and it knew about one of these problems for *more than six years* prior to the shutdown. The GAO also documented that the NRC was aware of unresolved safety problems at the Millstone plant in Connecticut and the Cooper plant in Nebraska.

These findings prompted the GAO to conclude:

- "NRC has not taken aggressive enforcement action to force the licensees to fix their long-standing safety problems on a timely basis."
- "NRC allowed safety problems to persist because it was confident that redundant design features kept plants inherently safe."

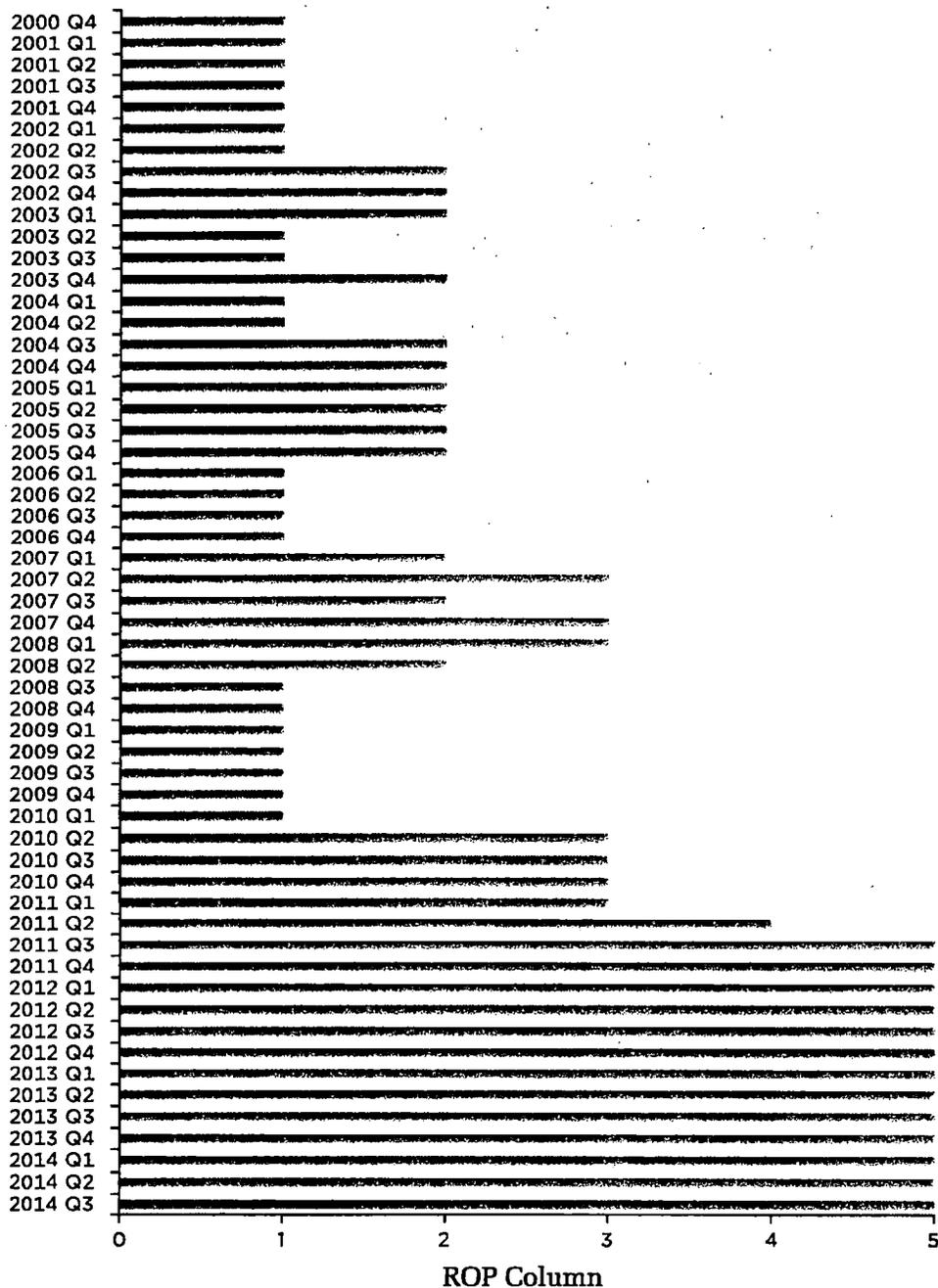
In response to criticism from the GAO and others, the NRC replaced its safety monitoring programs in April 2000 with its Reactor Oversight Process (ROP). The ROP evaluates a reactor's safety performance by combining 17 performance indicators (submitted quarterly by plant owners) with NRC

inspectors' findings, then places the reactor into one of five Action Matrix columns. When the safety performance of a reactor falls within the expected regime, the reactor is placed in Column 1 and the NRC conducts only a baseline number of inspections. As safety performance declines, the ROP mandates supplemental NRC inspections. If safety performance declines too much and a reactor falls into Column 5, the ROP will trigger a shutdown until the owner fixes the problems.

The ROP Action Matrix for Fort Calhoun from the fourth quarter of 2000 (when the ROP program began) to the third quarter of 2014 is shown in the figure on p. 6. The NRC moved Fort Calhoun from Column 1 into Column 2 in the third quarter of 2002, but later concluded that safety performance

There were dozens, and sometimes hundreds, of opportunities for workers and NRC inspectors to detect safety problems at Fort Calhoun—opportunities that were missed.

The NRC's ROP Action Matrix for Fort Calhoun, 2000-2014



As a nuclear power plant's safety performance declines, the NRC moves it from Column 1 to Column 5 in the Reactor Oversight Process Action Matrix. The NRC repeatedly moved Fort Calhoun back and forth in the matrix for over a decade until the agency decided the plant's problems were serious enough (Column 5) to warrant a shutdown.

SOURCE: NRC N.D.



NRC Commissioner William C. Ostendorff (left) speaks with NRC Senior Resident Inspector John Kirkland about repairs needed at Fort Calhoun while touring the plant during its 30-month outage.

had improved and returned the reactor to Column 1. This happened again in the fourth quarter of 2003 and the third quarter of 2004.

The NRC moved Fort Calhoun into Column 3 in the second quarter of 2007 and the fourth quarter of 2007, but each time returned the plant to Column 2. When the NRC again moved Fort Calhoun into Column 3 in the second quarter of 2010, however, the plant subsequently slipped into Column 4 and then into Column 5.

Thus, the ROP utterly failed to recognize the depth and breadth of the safety problems at Fort Calhoun until the third quarter of 2011. As noted above, all the safety problems summarized here existed at Fort Calhoun since at least 1996. They existed when the NRC returned Fort Calhoun from Column 2 to Column 1 on four occasions and when it returned Fort Calhoun from Column 3 to Column 2 on two occasions.

These problems were so serious that Fort Calhoun could not safely resume operation under NRC rules until each one was corrected, yet it had operated for over a decade with all of them. Quite simply, the people of Nebraska faced unduly high risk for over a decade because the NRC did not accurately evaluate safety levels at Fort Calhoun. The ROP has clearly not fixed the problems identified by the GAO in 1997.

Preventing Another Fort Calhoun— and an American Fukushima

A key nuclear safety principle is “defense in depth.” Reactors are designed so that no single problem will lead to a meltdown

or radiation release. At Fukushima, multiple problems caused three reactors to melt down: the reactors lost off-site power, the backup generators located in the basements were damaged when the basements flooded, floodwater disabled banks of batteries that backed up the backup generators, and workers could not deploy portable pumps and generators in time. The 1986 Chernobyl and 1979 Three Mile Island accidents also occurred when numerous things went wrong.

Quite simply, the people of Nebraska faced unduly high risk for over a decade because the NRC did not accurately evaluate safety levels at Fort Calhoun.

Conversely, there have been cases where many things went wrong and disaster was averted. For example, in 2002, workers at the Davis-Besse reactor in Ohio discovered that corrosion had caused a pineapple-sized hole in the reactor head, leaving only a thin steel cladding to contain the high-pressure coolant. Once the reactor was shut down, workers discovered additional serious safety problems. Despite operating with numerous safety problems, Davis-Besse avoided disaster because not all of its defense-in-depth barriers were compromised.

Nevertheless, a reactor operating with pre-existing safety problems is more vulnerable to disaster when another safety problem arises. Fort Calhoun, before its reactor was shut down, was more likely to experience a Fukushima-scale accident because it was already operating with multiple pre-existing safety problems. Pre-existing problems undermine defense in depth by reducing the number of things that must go wrong to transform a near-miss into a nightmare.

If the NRC's effort to prevent an American Fukushima is to be successful, it must augment that with an effort to prevent another Fort Calhoun. The NRC responded to Fukushima by forming a task force that examined the accident and made more than 30 recommendations to better manage nuclear power plant risks. It is now in the process of implementing those recommendations.

The NRC similarly needs to respond to Fort Calhoun by forming a task force to determine how the agency and the plant owner missed—or dismissed—numerous longstanding safety problems for years despite thousands of hours of inspections. The task force should recommend changes that will improve the effectiveness and reliability of the NRC's inspection and oversight efforts. The NRC then needs to implement these changes as quickly as possible.

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The NRC and Nuclear Power Plant Safety in 2014

Tarnished Gold Standard

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The NRC often claims to be the gold standard for nuclear power plant safety regulation and oversight. Ample evidence suggests much validity to these claims. One cannot count the number of nuclear disasters averted by the NRC's effective regulatory performance, but one can generally count on the NRC to be an effective regulator.

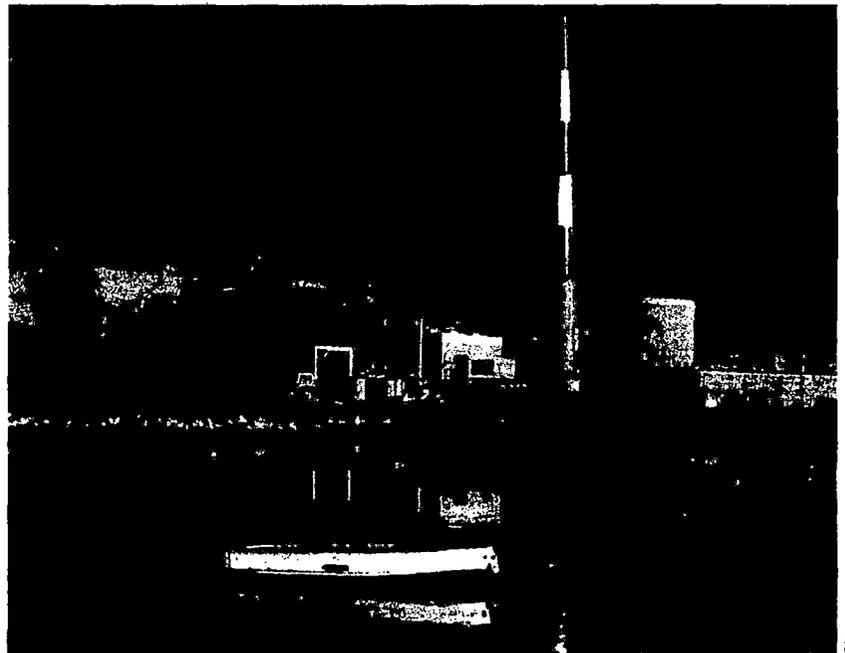
But the NRC's gold standard is tarnished. For the past decade, they have been improperly withholding documents about safety problems, have subjected engineers who voiced safety concerns to repeated investigations of alleged but unsubstantiated wrongdoing, and have been using nonuniform answer keys to grade standardized tests administered via its reactor oversight process.

If the NRC truly is the gold standard, it must restore the luster and prevent the tarnish from recurring.

The Nuclear Regulatory Commission (NRC) often claims to represent the gold standard for nuclear power plant safety regulation and oversight (Macfarlane 2013; Magwood 2013). Ample evidence, including the summaries of positive outcomes achieved by the NRC in this series of annual reports, suggests much validity to these claims. One cannot count the number of nuclear disasters averted by the NRC's effective regulatory performance, but one can generally count on the NRC to be an effective regulator. The NRC has done much to earn the gold standard label.

Chapter 4 of this report describes how the NRC conducted two extensive reassessments of its reactor oversight process—not in response to an accident demonstrating its inadequacy or to criticism suggesting an inadequacy, but as a proactive measure aimed at enhancing the effectiveness and efficiency of the existing process. Chapter 4 also describes how a decade ago the NRC recognized it had an aging work force and developed formal programs to retain as much tribal knowledge as possible before its retirees hit the golf courses and beaches in their golden years. Such proactive actions enable the NRC to retain the gold standard label.

Chapters 2 and 3 of this report describe how the number and severity of near misses at nuclear power plants have been steadily declining since 2010 (Table 1, p. 2), again consistent with the NRC being an effective regulator.



The Millstone Power Station in Waterford, CT, which experienced two self-inflicted near misses in 2014 when recent maintenance and modifications introduced problems that reduced safety margins.

TABLE 1. Near Misses 2010 to 2014

	Reactor	Total Number of Near Misses	Near Misses in 2010	Near Misses in 2011	Near Misses in 2012	Near Misses in 2013	Near Misses in 2014
1	Arkansas Nuclear One Unit 1	2	1			1	
2	Arkansas Nuclear One Unit 2	2	1			1	
3	Braidwood Unit 1	2	1	1			
4	Braidwood Unit 2	2	1	1			
5	Browns Ferry Unit 1	1				1	
6	Browns Ferry Unit 2	1				1	
7	Browns Ferry Unit 3	1				1	
8	Brunswick Unit 1	1	1				
9	Brunswick Unit 2	2	1		1		
10	Byron Unit 1	1		1			
11	Byron Unit 2	2		1	1		
12	Callaway	1		1			
13	Calvert Cliffs Unit 1	2	1				1
14	Calvert Cliffs Unit 2	2	1				1
15	Catawba Unit 1	3	1		1		1
16	Catawba Unit 2	1	1				
17	Clinton	1					1
18	Columbia	3				3	
19	Cooper	1		1			
20	Crystal River Unit 3	1	1				
21	Davis-Besse	1	1				
22	Diablo Canyon Unit 2	1	1				
23	Farley Unit 1	1			1		
24	Farley Unit 2	2	1		1		
25	Fermi Unit 2	1					1
26	Fort Calhoun	4	1		2	1	
27	Grand Gulf	1					1
28	H.B. Robinson	2	2				
29	Joseph M. Farley Unit 2	1					1
30	LaSalle Unit 1	1				1	
31	LaSalle Unit 2	1				1	
32	Millstone Unit 2	2		1			1
33	Millstone Unit 3	2					2

TABLE 1. Near Misses 2010 to 2014 (continued)

	Reactor	Total Number of Near Misses	Near Misses in 2010	Near Misses in 2011	Near Misses in 2012	Near Misses in 2013	Near Misses in 2014
34	North Anna Unit 1	1		1			
35	North Anna Unit 2	1		1			
36	Oconee Unit 1	1		1			
37	Oconee Unit 2	1		1			
38	Oconee Unit 3	1		1			
39	Oyster Creek	1				1	
40	Palisades	3		2	1		
41	Palo Verde Unit 1	1			1		
42	Palo Verde Unit 2	1			1		
43	Palo Verde Unit 3	1			1		
44	Perry	2		1	1		
45	Pilgrim	2		2			
46	River Bend	2			1		1
47	San Onofre Unit 2	1			1		
48	San Onofre Unit 3	1			1		
49	Shearon Harris	2			1	1	
50	Surry Unit 1	1	1				
51	Susquehanna Unit 2	1				1	
52	Turkey Point Unit 3	1		1			
53	Wolf Creek	4	1	1	2		
	Total	31	19	19	18	14	11

The overall number of near misses continues to decline each year, as does the number of affected sites and the severity of events.

SOURCE: UCS.

But Chapter 5 reveals the gold standard to be tarnished. For the past decade, the NRC has been improperly withholding documents, including many about safety problems. By doing so, the NRC deprived the public of legal rights for regulatory decision-making and painted a misleading picture of nuclear safety. Chapter 5 also describes how two NRC engineers who did their duties and voiced safety concerns were subjected to repeated investigations of alleged but unsubstantiated wrongdoing, sending a very clear message throughout the agency that “silence is golden.” Finally, chapter 5 explains

how the NRC has been using nonuniform answer keys to grade standardized tests administered via its reactor oversight process (Table 2, p. 4), yielding numerical outcomes less predictable than fluctuating gold prices. By improperly withholding many safety problem reports and jiggling the grading of other safety problems, the improving trends may be more fabrication than fact. If the NRC truly is the gold standard of nuclear regulators, it must restore the luster by removing this tarnish and preventing it from recurring.

TABLE 2. Seven Cornerstones of the Reactor Oversight Process

Initiating Events	Conditions that, if not properly controlled, require the plant's emergency equipment to maintain safety. Problems in this cornerstone include improper control over combustible materials or welding activities, causing an elevated risk of fire; degradation of piping, raising the risk that it will rupture; and improper sizing of fuses, raising the risk that the plant will lose electrical power.
Mitigating Systems	Emergency equipment designed to limit the impact of initiating events. Problems in this cornerstone include ineffective maintenance of an emergency diesel generator, degrading the ability to provide emergency power to respond to a loss of offsite power; inadequate repair of a problem with a pump in the emergency reactor-core cooling system, reducing the reliability of cooling during an accident; and non-conservative calibration of an automatic temperature set point for an emergency ventilation system, delaying its startup longer than safety studies assume.
Barrier Integrity	Multiple forms of containment preventing the release of radioactive material into the environment. Problems in this cornerstone include foreign material in the reactor vessel, which can damage fuel assemblies; corrosion of the reactor vessel head; and malfunction of valves in piping that passes through containment walls.
Emergency Preparedness	Measures intended to protect the public if a reactor releases significant amounts of radioactive material. Problems in this cornerstone include emergency sirens within 10 miles of the plant that fail to work; and underestimation of the severity of plant conditions during a simulated or actual accident, delaying protective measures.
Public Radiation Safety	Design features and administrative controls that limit public exposure to radiation. Problems in this cornerstone include improper calibration of a radiation detector that monitors a pathway for the release of potentially contaminated air or water to the environment.
Occupational Radiation Safety	Design features and administrative controls that limit the exposure of plant workers to radiation. Problems in this cornerstone include failure to survey an area properly for sources of radiation, causing workers to receive unplanned exposures; and incomplete accounting of individuals' radiation exposure.
Security	Protection against sabotage that aims to release radioactive material into the environment, which can include gates, guards, and guns. After 9/11, the NRC reduced the discussion of this cornerstone in the public arena.

The NRC's Reaction Oversight Process features seven cornerstones of reactor safety to help inspectors detect problems before they become more serious.

SOURCE: WWW.NRC.GOV/REACTORS/OPERATING/OVERSIGHT/ROP-DESCRIPTION.HTML.



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REPORT OF SECURITY INCIDENT/INFRACTION/VIOLATION

TO: Division of Facilities and Security		FROM: (DIVISION/OFFICE IN WHICH INFRACTION OCCURRED) DRA / RES	
NAME(S) OF PERSON ACKNOWLEDGING RESPONSIBILITY (b)(7)(C)		TITLE (b)(7)(C)	
TYPE OF SECURITY REPORT:		<input type="checkbox"/> INCIDENT <input checked="" type="checkbox"/> INFRACTION <input type="checkbox"/> VIOLATION	
DATE OF OCCURRENCE: 9/18/2012		DATE REPORTED: 9/20/2012	
HIGHEST CLASSIFICATION OF MATERIAL INVOLVED: <input checked="" type="checkbox"/> SUNSI <input type="checkbox"/> SGI <input type="checkbox"/> CONFIDENTIAL <input type="checkbox"/> SECRET <input type="checkbox"/> TOP SECRET			
WAS RESTRICTED DATA INVOLVED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> N/A			
REASON OR CAUSE FOR INFRACTION A RES/DRA staff sent an email to Chairman Macfarlane and others within the agency and outside the agency. Those on distribution outside the agency include the U.S. Office of Special Counsel and House and Senate oversight committee members and staff. The email and both attachments contain sensitive information (SUNSI) but were not properly marked. The reason for not properly marking the information is unknown.			
DESCRIPTION OF INCIDENT AND ASSOCIATED MANAGEMENT DIRECTIVES SECTION INVOLVED: Sensitive information (SUNSI) was not appropriately labeled or marked and was transmitted outside the agency to other federal government entities. The email message does not appear to have been sent to anyone outside the federal government. Neither the email nor the attached letter was marked as containing sensitive information. Management Directive sections involved are MD 12.1 section V, "Infractions and Violations" and Part II of MD 12.6, "Protection and Control of Sensitive Unclassified Information."			
IMMEDIATE CORRECTIVE ACTION TAKEN: (See Page 2 for suggested disciplinary action.) The transmittal outside the agency of sensitive information (SUNSI) without proper markings was reported to the Division of Facilities and Security on 9/20/2012. Additional corrective actions are under consideration.			
CORRECTION MEASURES TAKEN PENDING LONG TERM RESOLUTION: None yet identified.			

SUBMIT