NRC FORM 464 Part I (03-2017) U.S. NUCLEAR REGULATORY COMMISSION

# RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) REQUEST

| FOIA | RESPONSE NUMBER |
|---|---|
| 2018-000304 | 1 |

RESPONSE TYPE ☐ INTERIM ☑ FINAL

| REQUESTER: | DATE: |
|---|---|
| Paul Blanch | 2/23/2018 |

**DESCRIPTION OF REQUESTED RECORDS:**

ML18019A140, EOC OE Note-2018.

## PART I. – INFORMATION RELEASED

You have the right to seek assistance from the NRC's FOIA Public Liaison. Contact information for the NRC's FOIA Public Liaison is available at https://www.nrc.gov/reading-rm/foia/contact-foia.html

- ☐ Agency records subject to the request are already available on the Public NRC Website, in Public ADAMS or on microfiche in the NRC Public Document Room.
- ☑ Agency records subject to the request are enclosed.
- ☐ Records subject to the request that contain information originated by or of interest to another Federal agency have been referred to that agency (see comments section) for a disclosure determination and direct response to you.
- ☐ We are continuing to process your request.
- ☑ See Comments.

## PART I.A – FEES

AMOUNT*
**$0.00**
*See Comments for details

- ☐ You will be billed by NRC for the amount listed.
- ☐ You will receive a refund for the amount listed.
- ☐ Fees waived.

**NO FEES**

- ☑ Minimum fee threshold not met.
- ☐ Due to our delayed response, you will not be charged fees.

## PART I.B – INFORMATION NOT LOCATED OR WITHHELD FROM DISCLOSURE

- ☐ We did not locate any agency records responsive to your request. *Note:* Agencies may treat three discrete categories of law enforcement and national security records as not subject to the FOIA ("exclusions"). 5 U.S.C. 552(c). This is a standard notification given to all requesters; it should not be taken to mean that any excluded records do, or do not, exist.
- ☑ We have withheld certain information pursuant to the FOIA exemptions described, and for the reasons stated, in Part II.
- ☐ Because this is an interim response to your request, you may not appeal at this time. We will notify you of your right to appeal any of the responses we have issued in response to your request when we issue our final determination.
- ☑ You may appeal this final determination within 90 calendar days of the date of this response by sending a letter or e-mail to the FOIA Officer, at U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, or FOIA.Resource@nrc.gov. Please be sure to include on your letter or email that it is a "FOIA Appeal." You have the right to seek dispute resolution services from the NRC's Public Liaison, or the Office of Government Information Services (OGIS). Contact information for OGIS is available at https://ogis.archives.gov/about-ogis/contact-information.htm

## PART I.C COMMENTS ( Use attached Comments continuation page if required)

Please note:

The requested record is being released in part

**Signature - Freedom of Information Act Officer or Designee**

[redacted]

NRC FORM 464 Part II
(08-2013)

U.S. NUCLEAR REGULATORY COMMISSION

# RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) / PRIVACY ACT (PA) REQUEST

**FOIA/PA**
NRC 2018 000304

DATE
2/23/2018

## PART II.A -- APPLICABLE EXEMPTIONS

GROUP
X

Records subject to the request that are contained in the specified group are being withheld in their entirety or in part under the Exemption No.(s) of the PA and/or the FOIA as indicated below (5 U.S.C. 552a and/or 5 U.S.C. 552(b)).

- ☐ Exemption 1: The withheld information is properly classified pursuant to Executive Order 12958.
- ☐ Exemption 2: The withheld information relates solely to the internal personnel rules and practices of NRC.
- ☐ Exemption 3: The withheld information is specifically exempted from public disclosure by statute indicated.
  - ☐ Sections 141-145 of the Atomic Energy Act, which prohibits the disclosure of Restricted Data or Formerly Restricted Data (42 U.S.C. 2161-2165).
  - ☐ Section 147 of the Atomic Energy Act, which prohibits the disclosure of Unclassified Safeguards Information (42 U.S.C. 2167).
  - ☐ 41 U.S.C., Section 4702(b), prohibits the disclosure of contractor proposals in the possession and control of an executive agency to any person under section 552 of Title 5, U.S.C. (the FOIA), except when incorporated into the contract between the agency and the submitter of the proposal.
- ☑ Exemption 4: The withheld information is a trade secret or commercial or financial information that is being withheld for the reason(s) indicated.
  - ☑ The information is considered to be confidential business (proprietary) information.
  - ☐ The information is considered to be proprietary because it concerns a licensee's or applicant's physical protection or material control and accounting program for special nuclear material pursuant to 10 CFR 2.390(d)(1).
  - ☐ The information was submitted by a foreign source and received in confidence pursuant to 10 CFR 2.390(d)(2).
  - ☐ Disclosure will harm an identifiable private or governmental interest.
- ☑ Exemption 5: The withheld information consists of interagency or intraagency records that are not available through discovery during litigation. Applicable privileges:
  - ☑ Deliberative process: Disclosure of predecisional information would tend to inhibit the open and frank exchange of ideas essential to the deliberative process. Where records are withheld in their entirety, the facts are inextricably intertwined with the predecisional information. There also are no reasonably segregable factual portions because the release of the facts would permit an indirect inquiry into the predecisional process of the agency.
  - ☐ Attorney work-product privilege. (Documents prepared by an attorney in contemplation of litigation)
  - ☐ Attorney-client privilege. (Confidential communications between an attorney and his/her client)
- ☐ Exemption 6: The withheld information is exempted from public disclosure because its disclosure would result in a clearly unwarranted invasion of personal privacy.
- ☐ Exemption 7: The withheld information consists of records compiled for law enforcement purposes and is being withheld for the reason(s) indicated.
  - ☐ (A) Disclosure could reasonably be expected to interfere with an enforcement proceeding (e.g., it would reveal the scope, direction, and focus of enforcement efforts, and thus could possibly allow recipients to take action to shield potential wrong doing or a violation of NRC requirements from investigators).
  - ☐ (C) Disclosure could constitute an unwarranted invasion of personal privacy.
  - ☐ (D) The information consists of names of individuals and other information the disclosure of which could reasonably be expected to reveal identities of confidential sources.
  - ☐ (E) Disclosure would reveal techniques and procedures for law enforcement investigations or prosecutions, or guidelines that could reasonably be expected to risk circumvention of the law.
  - ☐ (F) Disclosure could reasonably be expected to endanger the life or physical safety of an individual.
- ☐ OTHER (Specify)

## PART II.B -- DENYING OFFICIALS

Pursuant to 10 CFR 9.25(g), 9.25(h), and/or 9.65(b) of the U.S. Nuclear Regulatory Commission regulations, it has been determined that the information withheld is exempt from production or disclosure, and that its production or disclosure is contrary to the public interest. The person responsible for the denial are those officials identified below as denying officials and the FOIA/PA Officer for any denials that may be appealed to the Executive Director for Operations (EDO).

| DENYING OFFICIAL | TITLE/OFFICE | RECORDS DENIED | APPELLATE OFFICIAL | | |
|---|---|---|---|---|---|
| | | | EDO | SECY | IG |
| Stephanie Blaney | FOIA/PA Officer | X | ☑ | ☐ | ☐ |
| | | | ☐ | ☐ | ☐ |
| | | | ☐ | ☐ | ☐ |

Appeal must be made in writing within 30 days of receipt of this response. Appeals should be mailed to the FOIA/Privacy Act Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, for action by the appropriate appellate official(s). You should clearly state on the envelope and letter that it is a "FOIA/PA Appeal."

# Operating Experience Note

*No. 19* **January 2018**

**Contacts:**

**Jesse Robles: 415-2940**
Jesse.Robles@nrc.gov

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Eric.Thomas@nrc.gov

*Inside (click to view)*



(b)(5)

*Let us know what you think*
Provide feedback to:

Eric.Thomas@nrc.gov or
301-415-6772

# End of Cycle Operating Experience Update, 2018

## Introduction and Philosophy

The purpose of this report is to provide the regions with insights into recent themes that have been noted by Headquarters Operating Experience (OpE) staff and our regional points of contact. This report focuses issues that are tied to recent trends in OpE and have a nexus to one or more inspection modules. This report is intended to provide information that will better inform the inspection program.

Additional Operating Experience Branch staff observations and event summaries can be found in our Periodic Operating Experience newsletters, which we circulate every few months; in other Operating Experience Notes, which we produce in response to specific inquiries; and in Operating Experience Communications. All of our products are located on the OpE Sharepoint Portal.

We encourage recipients and users of this report to provide feedback directly to Jesse Robles or Eric Thomas.

## Oil Sight Glass Events

*Eric Thomas and John Thompson*

**Summary**

On September 13, 2017, during an auxiliary feedwater pump (AFW) quarterly surveillance run, the licensee at Davis Besse noted high temperatures on the AFW turbine inboard bearing. Operators tripped the pump, and investigation revealed bearing damage, which was attributed to a lack of lubrication caused by insufficient level in the oil reservoir. The staff issued an Operating Experience OpE Communication (COMM) describing the event at Davis Besse. The COMM includes discussions of other similar events where oil levels in various components were inaccurately indicated on sight glasses for a variety of different reasons.

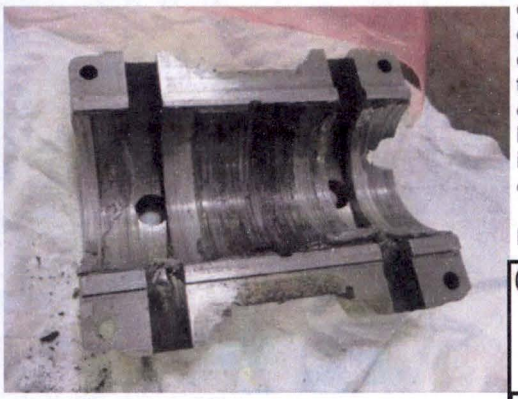

Figure 1: Davis Besse Failed Inboard Bearing

**Discussion**

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(b) The minimum level mark on the sight glass was lower than what was described in the vendor manual. Operators had recently drained 10-11 ounces from the oil reservoir for a sample. Since level was still above the low level mark on the sight glass, they did not replenish the oil. This caused oil level to remain below that required for the turbine's slinger rings to effectively lubricate the inboard bearing, and resulted in excessive bearing damage (see figure 1).

A review of the vendor guidance for the AFW pump and turbine revealed specific instructions for setting the oil sight glass minimum and maximum levels. The band described in the guidance required oil level to read higher on the sight glass, and required oil level to be maintained within a tighter band

(b) what the licensee was using (b)(5)

(b)(5)

## Oil Sight Glass Events (cont'd)

After performing an OpE search, the staff uncovered other instances of performance issues related to oil sight glasses. These are discussed in detail in the OpE COMM:

- ANO-2 (2016) - EDG inboard generator bearing failed from lack of lubrication. The sight glass was inverted by workers during post-surveillance reinstallation which led to low oil level.
- Hope Creek (2009) - HPCI booster pump outboard bearing oil level was below the minimum level mark with oil leaking from the sight glass housing threaded connection. Procedural guidance and other operator aids were insufficient to ensure proper oil level was maintained.
- Beaver Valley (2001) - AFW pump outboard bearing oil level sight glass did not have sufficient markings for high/low oil level.

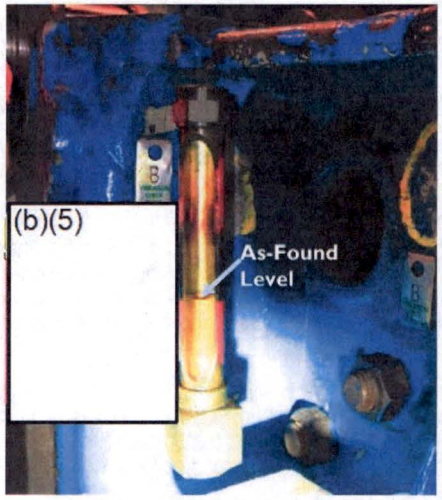

Figure 2: Davis Besse As-Found Oil Level

**Inspector Takeaways**

The OpE COMM contains several tips for inspectors as they perform plant walkdowns or inspections of systems using oil sight glasses or bubblers. In summary, inspectors should look for:

- Evidence that the licensee's methods for assuring proper oil level using a sight glass is based on procedural guidance and vendor recommendations, and limits reliance on skill of the craft or other operator walkarounds.
- Potential leaks from oil sight glasses.
- Sight glasses that may have been installed upside down, rendering the level markings inaccurate.
- Air flow in the vicinity of sight glass vents which can cause erroneous level readings.

**Previous Operating Experience**

- Information Notice (IN) 81-24, "Auxiliary Feed Pump Turbine Bearing Failures"
- IN 2008-09, "Turbine-Driven Auxiliary Feedwater Pump Bearing Issues"

**Relevant Inspection Procedures**

- IP 71111.12, "Maintenance Effectiveness"
- IP 71111.21M, "Design Basis Assurance Inspections"
- IP 71152, "Problem Identification and Resolution"

**Additional Actions**

The staff is in the process of writing an information notice to communicate this issue to stakeholders.

## RPS Test Box

*John Thompson*

**Summary**

In recent months, there have been several instances where Boiling Water Reactor (BWR) licensees did not enter the correct Technical Specification (TS) Action Statement during quarterly surveillance (b)(5) ing of the reactor protection system (RPS) logic. These issues (b)(5) (b)(5) Oyster Creek in August of 2017, and Fermi in September of 2016) involved surveillance testing of RPS logic strings for the closure function of the Turbine Stop Valves (TSVs) and Main Steam Isolation Valves (MSIVs).

*Link to OpE COMM:*
(b)(5)

## RPS Test Box (cont'd)

### Discussion

Most BWR designs have four RPS trip channels (A1, A2, B1, and B2) and two RPS trip systems (A and B). Each channel is capable of producing a half scram by satisfying the one out of two logic required to actuate a trip system. A reactor trip (full scram) occurs if the one out of two logic is satisfied on each of the two trip systems (i.e., at least one MSIV in 3 of 4 main steam lines close, or 3 of 4 TSVs close). During typical RPS quarterly surveillance testing, one channel is placed in test in order to conduct the surveillance test. Placing any one of the four channels in test generates a half scram, leaving any of the other three channels available to generate a full scram. While this arrangement is conservative, the practicality of this situation means a licensee is at heightened risk of experiencing a full scram during the surveillance activity. In order to reduce this risk, industry-based initiatives by the Boiling Water Reactor Owners Group (BWROG) have been underway since 2008 to reduce the number of preventable scrams. One solution resulting from this initiative is the use of a device that prevents generation of a half scram during RPS logic testing. Specifically, a "RPS Test Box" is used in similar fashion as an electrical jumper, but is designed to allow monitoring of the contact state while maintaining electrical continuity across the contact(s) being tested. This configuration thus prevents the generation of a half-scram signal when the contacts are opened (de-energized) during surveillance testing.

When used in MSIV and TSV RPS logic surveillances, the RPS Test Box is installed across contacts that are arranged in parallel (see Figure 3). Doing so removes multiple contacts from the circuit, and impacts the ability to meet the TS requirement for both trip systems to have each channel associated with the MSIVs in 3 main steam lines either operable or in trip, or for both trip systems associated with the TSVs to have 3 channels either operable or in trip. With the RPS Test Box installed across multiple contacts, 2 of 4 main steam lines become inoperable, rendering the MSIV closure function (and similarly for the TSV closure function) not maintained. This requires the licensee to enter a TS Condition requiring action to restore trip capability within one hour. In the case of Fermi, the test box was installed for less than an hour, but the licensee did not enter the TS Condition. At Oyster Creek, the licensee had the RPS Test Box installed for greater than the one hour allowed by TS.

RPS Test Box Jumper Connection Points

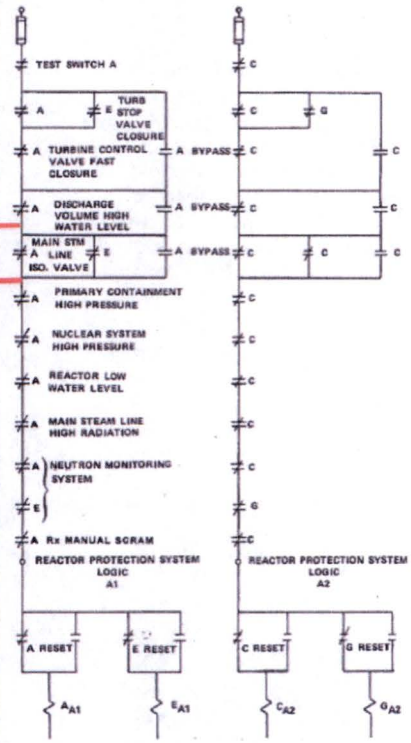


Figure 3: Fermi-2 RPS Trip System Logic Showing Location of RPT Test Box for MSIV Surveillance Testing

For most BWRs, use of the RPS Test Box is a change in testing that requires a formal 10 CFR 50.59 evaluation. Following its realization that use of the RPS Test Box would require entry into a TS action statement for trip functions involving parallel logic strings, Fermi-2 revised its procedures to discontinue use of the RPS Test Box. IOEB staff is drafting an information notice on this issue.

### Inspector Takeaways

Inspectors should maintain a questioning attitude if they become aware that their licensee is using a RPS Test Box during surveillance testing. If the licensee is using the RPS Test Box, inspectors should determine:

- Did the change require a 50.59 evaluation and was the evaluation performed?
- Whether use of the RPS Test Box involves bypassing any contacts that are arranged in parallel.
- Whether the plant should be entering any TS conditions when using the RPS Test Box
- (b)(4) ensee is aware of (b)(4) along with existing industry OpE related to use of the RPS Test Box.

### Relevant Inspection Procedure

- 71111.18, "Plant Modifications

### Additional Staff Actions

Staff is in the process of drafting an IN to communicate this issue with stakeholders.

# Waterford 3 Loss of Offsite Power (LOOP) Event

*By Steve Pannier*

**Summary**

On July 17, 2017, during a rain and lightning event, plant operators at Waterford 3 manually tripped the main turbine and generator based on a report of arcing being observed from a main transformer isophase bus duct. This resulted in an automatic reactor cutback. After the main turbine and generator trip, the circuit breakers associated with the unit auxiliary transformers (UATs) automatically opened, but the circuit breakers for the startup transformers failed to automatically close as designed. This resulted in the de-energization of all safety and non-safety AC buses. The reactor coolant pumps tripped, causing an automatic reactor trip on a loss of forced circulation. Both emergency diesel generators (EDGs) started as designed and reenergized the safety buses. Waterford 3 declared an Unusual Event (UE) based on a loss of offsite power lasting longer than 15 minutes (See EN 52863). Four hours later, the licensee exited the UE after successfully shifting loads from the EDGs to the startup transformer.

*Link to Waterford 3*
(b)(5)

*Link to Waterford 3*
(b)(5)

*Link to Waterford 3*
(b)(5)

**Discussion**

The licensee determined an apparent cause of the initiating event to be loose bolted connections associated with laminated flex links, which resulted in high electrical currents and the eventual failure of the isophase bus duct. During the ensuing special inspection, NRC inspectors found that the licensee did not perform adequate preventive maintenance consistent with site requirements to identify the loosening connections prior to failure. The NRC has also issued previous generic communications on the importance of maintaining tight bolted connections.

- Information Notice (IN) 2010-25, "Inadequate Electrical Connections"
- IN 2000-14, "Non-Vital Bus Fault Leads to Fire and Loss of Offsite Power"

The root cause for the failure of the fast transfer of electrical loads from the UATs to the startup transformers was the failure of the installed Struthers-Dunn time-delay relays in the fast transfer circuitry. When the UATs lost power, the subsequent de-energization of the 152X relay produced a large change in voltage that, because surge suppression was not utilized, caused the Struthers-Dunn relays to instantaneously time out and open their contacts. The absence of any time-delay prevented the fast bus transfer to the startup transformers. The Struthers-Dunn relays were installed during the licensee's April 2017 refueling outage. Prior to their installation, Allen Bradley time-delay relays were used, which contained integrated surge suppression. The surge suppression allowed the Allen Bradley time-delay relays to mitigate the voltage transient produced by the 152X relay, which permitted the fast bus transfer to operate successfully.

The licensee considered the root cause of the fast bus transfer failure to be a deficient design change modification implemented on the fast bus transfer circuitry to replace the Allen Bradley time-delay relays with Struthers-Dunn time-delay relays. That design change did not consider surge suppression as a critical relay characteristic. Commercial grade dedication, including the importance of considering all of a component's critical design characteristics, is discussed in two recent NRC Information Notices:

- IN 2016-01, "Recent Issues Related to the Commercial Grade Dedication of Allen-Bradly 700-RTC Relays"
- IN 2016-09, "Recent Issues Identified When Using Reverse Engineering Techniques in the Procurement of Safety-Related Components"

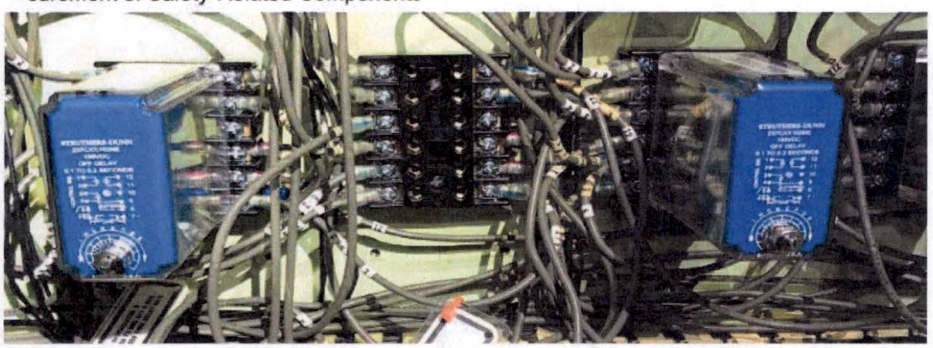

Figure 4: Image of Struthers-Dunn Relays Installed at Waterford 3

## Waterford 3 Loss of Offsite Power (LOOP) Event (cont'd)

**Inspector Takeaways**

The root and contributing causes for this event are both issues that are well-known and have been focused on by NRC's operating experience and quality assurance centers of expertise in the past few years. The event initiator was a loose electrical connection which caused a fault. Loose electrical connections have been covered in recent NRC generic communications and event inspections. Likewise, commercial grade dedication is a vulnerability that has been the root or contributing cause of several events recently.

- Inspectors can follow up on their licensee's disposition of industry operating experience and NRC generic communications pertaining to electrical connections.
- Inspectors can review their licensee's commercial grade dedication program. A good question to ask is how does the licensee ensure that they are including all critical characteristics when performing like for like piece-part replacements.

**Previous Operating Experience** (see NRC information notices listed on previous page)

**Relevant Inspection Procedures**

- IP 71111.18, "Plant Modifications"
- IP 43004, "Inspection of Commercial-Grade Dedication Programs"

**Additional Actions**

(b)(5)

## EDG Voltage Regulator Diode Failures

By Jason Carneal

**Summary**

*Link to OpE COMM on*
(b)(5)

Operating Experience staff recently published an OpE COMM summarizing a number of diode failures since 2010 which have adversely impacted the operability of EDGs. These diodes are located in the generator excitation system, which monitors generator output, and varies the strength of the magnetic field to maintain proper voltage. Most recently, in April 2017, diode CR4 in the EDG excitation circuit of the 2A EDG at Catawba Unit 2 short-circuited, causing the EDG to trip during a monthly surveillance test. The design of the generation excitation circuit, combined with numerous instances of operating experience pointing to the potential for early failure of the diode, should have prompted the licensee to have a more rigorous monitoring and replacement program in effect for these components.

**Discussion**

Catawba

Following the short-circuit of the diode at Catawba Unit 2, the licensee replaced all 6 of the diodes in along with 3 shunting thyristors in the rectifier circuit and power-driven potentiometer. Further analysis of the issue by NRC inspectors revealed a known design issue wherein certain diodes in the generator excitation circuit remain in an energized state for long periods of time, and are therefore subjected to elevated operating temperatures (as much as 60 deg F higher than other diodes in the circuit). These conditions can shorten diode life and lead to premature failures if the diodes are not replaced on a more frequent basis. Catawba had experienced previous failures of the CR4 diode, along with other diodes subjected to the elevated temperatures. In addition, the licensee had screened other operating experience related to diode failures into its corrective action program, including:

- NRC IN 2005-15, "Three Unit Trip and Loss of Offsite Power at Palo Verde Nuclear Generating Station"

(b)(4)

## EDG Voltage Regulator Diode Failures (cont'd)

The IN briefly mentions an EDG failure that occurred due to an excitation system diode failure following a major LOOP event at Palo Verde (b)(4)

(b)(4)

(b)(4) of the CR4 diode in 2005. (b)(4) Catawba received a White inspection finding under TS 5.4.1, "Procedures" for not establishing a preventive maintenance program for the EDG excitation system, and an associate violation of Appendix B Criterion XVI for failure to correct a condition adverse to quality associated with elevated operating temperatures of EDG excitation system diodes.

Wolf Creek

In October 2014, during a 24-hour surveillance test, Wolf Creek's 'B' EDG tripped due to a fire in the electrical excitation control cabinet. The source of the fire was the power potential transformer (PPT). The PPT became overloaded because of two failed diodes in the EDG's current transformer (CT). When these diodes failed, the current boost to the EDG excitation field was reduced, and the voltage regulator compensated by increasing the output of the PPT. This exceeded the load capability of the PPT, and over time it eventually failed. The CT diodes had likely failed during a previous surveillance run in June 2014. Operators had noticed smoke coming from the PPT during interim monthly runs, but it wasn't until the 24-hour endurance run that conditions worsened to the point of PPT overheating and failure. The licensee had planned to replace the PPT in August 2014, but the replacement was delayed until February 2015.

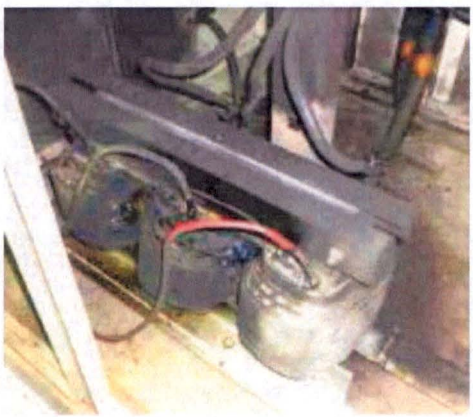

Figure 5: Failed PPT at Wolf Creek

The staff intends to issue an Information Notice summarizing these and other similar events.

**Inspector Takeaways**

Our domestic fleet of nuclear reactors includes many plants operating near or beyond their original 40-year licenses. These plants have numerous components installed that were either designed for the 40-year life of the plant or do not have a defined service life. These realities make it increasingly important for licensees to 1) follow up on operating experience regarding the reliability of safety-related components, and 2) take timely corrective action when they discover equipment that is at or near end of life. Continuous review of the licensee's corrective action program, along with periodic inspections of problem identification and resolution are two main methods inspectors can use to ensure licensees are identifying and fixing conditions adverse to quality.

(b)(4) **Experience** (see NRC information notice, OpE COMMs, and (b)(4)

**Relevant Inspection Procedures**

- IP 71111.12, "Maintenance Effectiveness"
- IP 71152, "Problem Identification and Resolution"

**Additional Actions**

(b)(5)

*Link to OpE COMM on*

(b)(5)

(b)(5) and Contractor Oversight

~~Rebecca Sigmon~~

**Summary**

(b)(4)

*Link to OpE COMM on*
(b)(5)

**Discussion**

(b)(4)

# Operating Experience Page 8 of 8

## (b)(5) and Contractor Oversight (cont'd)

**Inspector Takeaways**

The OpE COMM linked on the previous page contains several examples of inspection reports with findings related to difficulties encountered by U.S. power reactor licensees when performing non-
ructive examinations of pipes and welds. (b)(4)

(b)(4)

(b)(4)

**Previous Operating Experience**

- OpE COMM, "Arkansas Nuclear One Stator Drop"
- OpE COMM, "Licensee Oversight of Contractor and Vendor Activities"
- IN 2016-07, "Operating Experience Regarding Impacts of Site Electrical Power Distribution From Inadequate Oversight of Contractor Activities."

**Relevant Inspection Procedures**

- IP 71111.08, "Inservice Inspection (ISI) Activities,"
- IP 73054,"Part 52, Preservice And Inservice Inspection - Review Of Program"
- IP 65001.3, "Inspection of ITAAC-Related Installation of Piping"

When performing inservice inspection activities, inspectors should consider the following questions:

- Does the procedure meet the code requirements?
- Are the personnel performing the examinations following the procedure?
- Are contractors/vendors adequately trained on licensee expectations for procedure adherence?
- Is there an adequate level of independence between data analysts comparing examination results to acceptance criteria?
- Are indications appropriately characterized and compared to previous examination results?
- Is the licensee providing adequate, knowledgeable oversight of examinations performed by contractors?