

From: Mcginty, Tim
Sent: 19 Jul 2016 10:05:24 +0000
To: Mcginty, Tim;Lubinski, John;Whitman, Jennifer;Alley, David;DSSCAL
Resource
Subject: Backfit

From: Whitman, Jennifer
Sent: Monday, July 18, 2016 5:56 PM
To: Mcginty, Tim <Tim.McGinty@nrc.gov>; Cohen, Shari <Shari.Cohen@nrc.gov>
Cc: Weaver, Tonna <Tonna.Weaver@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>; Caponiti, Kathleen <Kathleen.Caponiti@nrc.gov>; Taylor, Robert <Robert.Taylor@nrc.gov>; Alley, David <David.Alley@nrc.gov>
Subject: RE: Exelon backfit discussion

I talked about it with Tim. I have an all-day public meeting tomorrow, but Noon to one should work.

From: Mcginty, Tim
Sent: Monday, July 18, 2016 5:20 PM
To: Cohen, Shari <Shari.Cohen@nrc.gov>
Cc: Weaver, Tonna <Tonna.Weaver@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>; Caponiti, Kathleen <Kathleen.Caponiti@nrc.gov>; Taylor, Robert <Robert.Taylor@nrc.gov>; Whitman, Jennifer <Jennifer.Whitman@nrc.gov>; Alley, David <David.Alley@nrc.gov>
Subject: RE: Exelon backfit discussion

Shari – please schedule a ½ hour meeting on “Backfit” with Tim, Jen, John and Dave (see above) for tomorrow. Thanks. Tim

From: Mcginty, Tim
Sent: Monday, July 18, 2016 5:15 PM
To: Lubinski, John <John.Lubinski@nrc.gov>
Cc: Taylor, Robert <Robert.Taylor@nrc.gov>; Whitman, Jennifer <Jennifer.Whitman@nrc.gov>; Mcdermott, Brian <Brian.McDermott@nrc.gov>; Hickey, James <James.Hickey@nrc.gov>; Oesterle, Eric <Eric.Oesterle@nrc.gov>; Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; Alley, David <David.Alley@nrc.gov>
Subject: FW: Exelon backfit discussion

John – as we discussed this afternoon, here is some of the background information referenced and gathered by the panel. Scroll down to the bottom of the email for more info that the panel has gathered.

I will ask Shari to schedule a meeting with Jennifer, myself, you and Dave Alley tomorrow.

P.S. In our June 12, 2014 backfit memo (ML14078A619) from Chris to Travis in DORL, John Billerbeck was the DE/EPNB staff member that concurred and Robert Wolfgang concurred for Tim Lupold.

Tim

From: Clark, Theresa
Sent: Monday, July 18, 2016 1:57 PM
To: Whitman, Jennifer <Jennifer.Whitman@nrc.gov>
Cc: Mcginty, Tim <Tim.McGinty@nrc.gov>; Holahan, Gary <Gary.Holahan@nrc.gov>; West, Steven <Steven.West@nrc.gov>; Scarbrough, Thomas <Thomas.Scarbrough@nrc.gov>; Spencer, Michael

<Michael.Spencer@nrc.gov>

Subject: RE: Exelon backfit discussion

Hi there! As promised, here are the microfiche references from the earlier Byron/Braidwood amendment requests we were discussing today. When Gary mentioned the printouts I forgot I had already saved copies from the scanner in the library. So, you get the copies too ☺ -- and as long as we don't add this version to ADAMS vs the official copy the records people don't get annoyed. The filenames show the microfiche addresses in case you need them.

- 12/9/1997 letter providing an amendment supplement identifying an issue with the spurious SI analysis
- 12/19/1997 letter providing path forward on spurious SI (planning amendment on automatic action of PORVs)
- 5/29/1998 LAR regarding automatic action of PORVs
- 5/13/1999 electrical RAI on the LAR above
- 7/16/1999 withdrawal of LAR above and RAI response

If you come across EPRI NP-2770 Volume 6 (Crosby safety valves) or NP-2670 (PORV test reports), please let us know. Thanks again!

--

Theresa Valentine Clark

Executive Technical Assistant (Reactors)

U.S. Nuclear Regulatory Commission

Theresa.Clark@nrc.gov | 301-415-4048 | O-16E22

-----Original Appointment-----

From: Clark, Theresa

Sent: Thursday, July 14, 2016 5:08 PM

To: Clark, Theresa; McGinty, Tim; DSSCAL Resource; Holahan, Gary; West, Steven; Scarbrough, Thomas; Spencer, Michael

Cc: Whitman, Jennifer

Subject: Exelon backfit discussion

When: Monday, July 18, 2016 12:30 PM-1:30 PM (UTC-05:00) Eastern Time (US & Canada).

Where: HQ-OWFN-16B06-12p

Hi Tim,

Thanks for being willing to meet with the EDO's appeal panel for the Exelon backfit. As we discussed on the phone, you can bring staff if you would like to. However, you may not feel the need at this point—we are intending for this to be a casual conversation about the technical issues that led to the backfit and aren't sending any preparatory materials/questions. If we need further discussions (e.g., with particular staff) after this we can certainly do that.

Also—I know this isn't a great time (and Steve has a potential conflict) but getting another time in the next two weeks was nigh on impossible. Let me know if it is really bad timing for you. Thanks!

Background References:

- Appeal panel charter: [ML16173A311](#)
- 6/16/16 NEI letter supporting Exelon backfit appeal to EDO: [attached, not yet in ADAMS]
- 6/2/16 Exelon backfit appeal to EDO: [ML16154A254](#)
- 5/3/16 NRR backfit appeal decision: [ML16095A204](#)

All of these documents are publicly available in ADAMS

- 12/8/2015 Exelon backfit appeal to NRR: [ML15342A112](#)
- 10/9/2015 NRC backfit letter: [ML14225A871](#)
- 8/26/04 pressurizer safety valve setpoint safety evaluation: [ML042250531](#)
- 5/4/01 stretch power uprate safety evaluation: [ML033040016](#)

From: Wiebe, Joel
Sent: 27 Jan 2016 19:18:21 +0000
To: Jandovitz, John
Subject: Braidwood/Byron Appeal Panel Charter

This document is publicly available in ADAMS

[View ADAMS P8 Properties ML15355A081](#)

[Open ADAMS P8 Document \(Backfit Review Panel Charter Regarding December 8, 2015, Exelon Appeal of Imposed Backfit Affecting Braidwood and Byron Stations.\)](#)

From: Wiebe, Joel
Sent: 2 Jun 2016 20:05:52 +0000
To: Miller, Ed; Boland, Anne; Duncan, Eric; Jandovitz, John; McGhee, James (James.McGhee@nrc.gov); Benjamin, Jamie; Betancourt, Diana; Draper, Jason; Garmoe, Alex
Subject: Braidwood/Byron Backfit Appeal to EDO
Attachments: RS-16-134.pdf

The attachment is publicly available in ADAMS as ML16154A254.

From: Purnell, Blake
Sent: 10 Feb 2016 08:00:51 -0500
To: Wiebe, Joel
Cc: Poole, Justin
Subject: Braidwood/Byron backfit appeal

Joel,

During Paul Krohn's monthly call with RIII management, the Region asked about the status of the Braidwood/Byron backfit appeal. RIII and Paul would like some update on this action and potential paths forward.

Thanks,

Blake Purnell
Project Manager
NRR/DORL/LPL3-2
ph: 301-415-1380

From: Wiebe, Joel
Sent: 13 Apr 2016 15:02:20 +0000
To: Garmoe, Alex
Subject: Braidwood/Byron Backfit Status?

Just checking status of appeal response letter.

Joel

From: Garmoe, Alex
Sent: Monday, March 28, 2016 9:42 AM
To: Wiebe, Joel <Joel.Wiebe@nrc.gov>
Cc: Brown, Eva <Eva.Brown@nrc.gov>
Subject: Quick Backfit Question

Joel/Eva,

In reading the October 9, 2015, issuance of a backfit to Braidwood and Byron (ML14225A871) I noticed the licensee was given 60 days to appeal the backfit. When Region II issued a backfit to Hatch in 2011 (ML111450793) they gave the licensee 30 days to appeal the backfit. When Region II rejected Hatch's backfit appeal back in 2011 (ML112730194) they gave the licensee 30 days to appeal the decision to the EDO. None of the letters point to a specific section in MD 8.4 or NUREG-1409 that stated how long a licensee should be given to appeal a decision, nor did I find anything when I searched the documents.

Since I am currently drafting an appeal response letter to the licensee, in the event the appeal is denied, how long does the licensee have to appeal the decision to the EDO? My gut would say 30 days to be consistent with Hatch but I think we should be able to point somewhere to back up that number.

Thanks for any thoughts!



Alexander D. Garmoe

Senior Project Manager

Generic Communications Branch (PGCB)
Division of Policy and Rulemaking (DPR)
Office of Nuclear Reactor Regulation (NRR)
Alex.Garmoe@nrc.gov | 301-415-3814

Braidwood/Byron Backfit Q & A

1. Q. Why is the NRC staff issuing this backfit?
 - A. The NRC staff identified an issue at Braidwood and Byron stations that determined the stations' licensing basis documentation is not consistent with design requirements. This staff conclusion differs from a position that was previously accepted by letter dated May 4, 2001 (Agencywide Document Access and Management System (ADAMS) Accession No. ML011420274). To correct the NRC staff position regarding this issue a backfit is being issued in accordance with the requirements of the regulations (10 CFR 50.109).
2. Q. How does issuing the backfit get the Braidwood and Byron stations into compliance with the Code of Federal Regulations?
 - A. Issuing the backfit identifies the NRC staff position on this issue. The licensee is required to take appropriate action to bring the Braidwood and Byron stations into compliance.
3. Q. What is the issue that required the backfit?
 - A. The NRC staff identified an issue involving the plants' systems which provide over-pressure protection of the pressurizer that could allow an event to cause a subsequent more serious event. Such events are not allowed by NRC requirements.
4. Q. What requirements in the Code of Federal Regulations are not being met?
 - A. The staff's evaluation identifies that the following 10 CFR Part 50, Appendix A, General Design Criteria (GDC), are not being complied with:

GDC 15 Reactor Coolant System Design

The reactor coolant system and associated auxiliary, control, and protection systems shall be designed with sufficient margin to assure that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences.

GDC 21 Protection System Reliability and Testability

The protection system shall be designed for high functional reliability and inservice testability commensurate with the safety functions to be performed. Redundancy and independence designed into the protection system shall be sufficient to assure that: (1) no single failure results in loss of the protection function and (2) removal from service of any component or channel does not result in loss of the required minimum redundancy unless the acceptable reliability of operation of the protection system can be otherwise demonstrated.

GDC 29 Protection against Anticipated Operational Occurrences (Reference 3)

The protection and reactivity control systems shall be designed to assure an extremely high probability of accomplishing their safety functions in the event of anticipated operational occurrences.

5. Q. Since Braidwood and Byron stations are not in compliance are they unsafe?
 - A. The staff has evaluated the non-compliance and determined that there are no immediate safety concerns at Braidwood and Byron stations as a result of the non-compliance. The staff has determined that if the postulated events occurred, non-safety plant equipment would activate to prevent failures of any plant equipment. In addition, the licensee has evaluated the response of the plant safety relief valves for the postulated event. The valves were evaluated by the NRC in a letter dated May 4, 2001 (ADAMS) Accession No. ML011420274.
6. Q. If this is of low safety significance why issue a backfit?
 - A. The NRC staff must ensure that the plant's design is in compliance with the requirements in the Code of Federal Regulations as required by the licenses.
7. Q. Could the licensee request an exemption from the regulations to resolve the backfit?
 - A. Yes. The licensee could request an exemption as permitted by 10 CFR Part 50.12. The NRC staff would evaluate the exemption by the criteria in 10 CFR Part 50.12 and the technical justification of the exemption request.
8. Q. Will the plants need to shutdown until the backfit is resolved?
 - A. No. As discussed above, the NRC staff has determined that there are no immediate safety concerns as a result of the non-compliance. The backfit process in NRC Management Directive 8.4, available on the NRC's public website at <http://pbadupws.nrc.gov/docs/ML1205/ML12059A460.pdf> allows the stations to continue to operate, if appropriate, while the backfit process is implemented. The backfit process includes opportunities for the licensee to appeal the backfit to the NRR Office Director and then to the EDO. If the licensee decides to modify the plant or procedures to resolve the backfit, the schedule for implementation can be negotiated based on safety significance.
9. Q. What if the licensee refuses to resolve the backfit after unsuccessfully appealing the backfit?
 - A. The NRC staff can issue an order requiring the licensee to take action.

Braidwood-Byron Stations Backfit

Key Messages

- **Braidwood and Byron are not in compliance with Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix A, General Design Criteria (GDC) 15, "Reactor Coolant System Design," GDC 21, "Protection System Reliability and Testability," and GDC 29, "Protection Against Anticipated Operational Occurrences," 10 CFR 50.34(b), "Final Safety Analysis Report," and the plant-specific design bases showing there will be no progression of Category II events into Category III events ("prohibition of progression of Condition II events").**
- **The inadvertent operation of emergency core cooling system (IOECCS) analysis that is the center of the non-compliance was previously accepted by the NRC staff in the Issuance of Amendments regarding the Increase in Reactor Power, Byron Station Units 1 and 2, and Braidwood Station, Units 1 and 2," May 4, 2001 (ADAMS Accession No. ML011420274).**
- **The staff determined that the current conclusion and position constitutes backfitting under 10 CFR 50.109(a)(1), however, it falls within the compliance exception of 10 CFR, Section 50.109(a)(4)(i). Accordingly, the staff did not prepared a backfit analysis to support the Safety Evaluation (SE).**

Facts

- The UFSAR IOECCS analysis predicts water relief through a valve that is not qualified for water relief. Therefore, the staff concludes that the UFSAR does not contain analyses that demonstrate the structures, systems, and components will meet the design criteria for Condition II faults as stated in the Braidwood and Byron UFSAR.
- Because the analyses in UFSAR, Chapters 15.5.1, 15.5.2, and 15.6.1, do not show that Condition II faults will not cause a more serious fault, the staff concludes that these UFSAR analyses do not demonstrate compliance with GDCs 15, 21, and 29.
- The NRC staffs conclusions with respect to noncompliance with GDCs 15, 21, and 29, 10 CFR 50.34(b) and UFSAR provisions with respect to prohibition of progression of Condition II events, differs from a previous NRC position on the acceptability of the Braidwood and Byron design bases. The staff's earlier position was documented in the SE for an increase in reactor power enclosed with a letter dated May 4, 2001 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML011420274). Therefore, the staff has determined that the current conclusion and position constitutes backfitting under 10 CFR 50.109(a)(1).
- The staff determined that the backfitting falls within the compliance exception in 10 CFR, Section 50.109(a)(4)(i), because the staff's interpretation, guidance, and general application (as opposed to the specific NRC approval for Byron and Braidwood) of GDCs 15, 21, and 29, 10 CFR, Section 50.34(b), have not changed, with respect to the unacceptability of the specific Condition II events at the Braidwood and Byron plants evolving to Condition III events. In addition, the staff's interpretation of these plants' UFSAR provisions with respect to prohibition of progression of Condition II events has not changed. Consequently, a backfit analysis is not required to support the staff's determinations, and the staff has not prepared a backfit analysis to support the SE.

Technical Description

Condition II - Faults of Moderate Frequency (definition from Byron and Braidwood UFSAR)

These faults, at worst, result in the reactor trip with the plant being capable of returning to operation. By definition, these faults (or events) do not propagate to cause a more serious fault, i.e., Condition III or IV events. In addition, Condition II events are not expected to result in fuel rod failures or reactor coolant system or secondary system overpressurization.

For this backfit the Condition II fault is the inadvertent operation of the ECCS pumps, which fill the pressurizer. The Braidwood/Byron analysis of this event results in the relief of water through the Safety Relief Valves, which are not ASME qualified to pass water. The staff, therefore, concludes that the SRV will be damaged and not reseal as designed. This results in a loss of coolant accident (leak greater than makeup capability), which is a Condition III event.

The licensee's position is that EPRI testing of these (or maybe similar valves) shows that the valves may leak, but not exceed makeup capability. The staff accepted this explanation in 2001 during a power uprate review and also during a subsequent SRV setpoint change review.

The staff's current position is that the EPRI testing does not show that the SRVs are ASME designed nor routinely tested to pass water and therefore cannot be used in that fashion in an accident analysis.

From: [Alley, David](#)
To: [Scarborough, Thomas](#)
Cc: [Billerbeck, John](#); [Lubinski, John](#)
Subject: Byron Braidwood backfit
Date: Monday, August 29, 2016 11:45:06 AM

Tom,

At the branch chief's meeting this morning John Lubinski asked that I reach out to you in an attempt to gain some insight on the Byron/Braidwood appeal process. John Billerbeck and I would be happy to discuss this with you at your convenience.

Dave

David Alley PhD.
Chief, Component Performance NDE and Testing Branch
US Nuclear Regulatory Commission
11555 Rockville Pike Rockville MD 20852
301-415-2178

From: Garmoe, Alex
Sent: Friday, September 02, 2016 3:49 PM
To: Gavrilas, Mirela
Cc: Stuchell, Sheldon
Subject: Compliance Backfit Information
Attachments: Braidwood-Byron Backfit Bullets 031516 ADG comments.docx; Backfit Appeal One Pager.docx; Senate EPW Hearing Question 52.docx; Compliance Backfit Questions and Answers Rev 3 updated.docx

Mirela,

While we were chatting earlier you expressed an interest in seeing the compliance backfit information I've compiled in response to various recent requests. Attached are documents created or updated in response to four recent requests for information on compliance backfit and/or the Exelon appeal. For the most part these have been ticketed requests that have come through Mike Mahoney.

If you have questions please let me know.



Alexander D. Garmoe

Senior Project Manager

Generic Communications Branch (PGCB)
Division of Policy and Rulemaking (DPR)
Office of Nuclear Reactor Regulation (NRR)
Alex.Garmoe@nrc.gov | 301-415-3814

A.3 Compliance Backfits

Background:

- In 1973, ANS 18.2-1973 was issued and **many** licensees incorporated it into their FSARs. This standard classifies transients and accidents according to frequency of occurrence and preserves this classification by requiring non-escalation.

Inadvertent safety injection (anticipated operational occurrence (AOO), Condition II) fills the pressurizer and causes water relief through power operated relief valves (PORVs). Unqualified PORVs stick open resulting in a small break loss of coolant accident (SBLOCA, Condition III) with the frequency of an AOO (Condition II), which violates the design requirements for AOOs. If, inadvertent safety injection is shown to not fill the pressurizer and PORVs relieve only steam, then the AOO (Condition II) design requirements are met.

- In 2005, Regulatory Issue Summary 2005-29 informs licensees of their commitments to ANS 18.2 and provides examples where the non-escalation requirement **has-was not been**-met.
- Between 2005 and now several licensees have made improvements to analyses and/or the plant to address this issue.

Recent Actions:

The NRC staff issued a compliance backfit to the Braidwood and Byron stations on October 9, 2015 (ADAMS Accession No. ML14225A871). On December 8, 2015, Exelon submitted a letter to the NRR Office Director to appeal the backfit (ML15342A112). NRC Management Directive 8.4, "Management of Facility-Specific Backfitting and Information Collections," and NRR Office Instruction LIC-202, "Procedures for Managing Plant-Specific Backfits and 50.54(f) Information Requests," describe the NRC backfit process, including the backfit appeal process, and NRR's office-specific implementation.

The compliance backfit was issued because three UFSAR Chapter 15 events failed to demonstrate compliance with the non-escalation requirement: Inadvertent Operation of the Emergency Core Cooling System; Chemical and Volume Control System Malfunction that Increases RCS Inventory; and Inadvertent Operation of a power-operated relief valve (PORV). Other issues identified in the same Chapter 15 events included the non-conservative assumption that pressurizer PORVs and spray are inoperable; the prediction of prolonged water relief through pressurizer safety valves (PSVs), which are not water-qualified per ASME code or tested under water-solid conditions; the failure to address return to operation, as required for analyses of AOOs; and incorrect statements in the UFSAR.

In accordance with LIC-202, the NRR Office Director appointed a three-member panel to review the backfit appeal (~~Charter: ML15355A081) and Exelon was offered an opportunity to present their appeal to the panel at a public meeting. The~~and a public meeting was held between the panel and Exelon on March 7, 2016 (meeting slides: ML16062A422, transcript: ML16070A364summary ML16070A362). The panel ~~will continue to review the information provided in the Exelon appeal letter, at the March 7 public meeting, and contained in related documents and provide a recommendation to the NRR Office Director toward the end of March.~~

A letter responding to the licensee is expected in early April, recommended denial of the appeal and the NRR Office Director communicated this decision to Exelon in a May 3, 2016 letter (ML16095A204). On June 2, 2016, Exelon appealed the decision to the EDO (ML16154A254). The EDO assigned a second independent panel to review the appeal and the panel recommended that the EDO grant the appeal and overturn the backfit. As of August 2016 a final decision had not been communicated to Exelon.

Exelon Appeal of Compliance Backfit

Key Messages

- **The Backfit Rule for power reactors (10 CFR 50.109) allows the imposition of new regulatory requirements after prior NRC approval (e.g., issuance of a license), if an analysis is prepared demonstrating that the backfit involves a substantial increase in protection to safety or security and that the costs are justified by this increase in protection.**
- **However, when the NRC demonstrates in a documented evaluation that a proposed backfit involves adequate protection or compliance with an established NRC requirement or licensee commitment, the NRC does not need to prepare a backfit analysis. The compliance exception can be used when NRC approved something that should not have been approved as a result of omitted information or a mistake of fact.**
- **NRC imposed a backfit using the compliance exception on Exelon's Braidwood and Byron plants by letter dated October 9, 2015. Exelon appealed the compliance backfit claiming it did not meet the requirements of the compliance exception and a backfit analysis should be conducted.**

Facts

Compliance Backfit Imposed on the Braidwood and Byron Plants

- Certain events can occur that result in the reactor coolant system over-filling with water, which pushes pressurizer safety valves (PSVs) open. Once the excess water addition is stopped, the PSVs must re-close to prevent an uncontrolled leak.
- Failure of a PSV to reclose would result in a Condition II event becoming a Condition III event (small break LOCA), which is prohibited by the Braidwood and Byron UFSARs.
- During review of a recent power uprate request, the NRC staff (staff) determined that Exelon did not provide sufficient information to show that the PSVs would re-close after relieving water and, thus, compliance with the UFSAR.
- In 2001 and 2004 the staff approved license amendment requests that predicted the PSVs would relieve water and re-close, even though the staff determined in hindsight that Exelon did not, at the time, provide sufficient information to show that the PSVs would re-close.
- The staff issued a backfit in October 2015 (ML14225A871) since Exelon's safety analyses predict the PSVs will relieve water in certain events and Exelon had not shown that the PSVs would re-close to prevent escalation from a Condition II to Condition III event.

Exelon's Appeal of the Compliance Backfit

- Exelon appealed the staff's use of the compliance exception to the backfit rule (ML15342A112), stating the NRC needed to perform a backfit analysis because the NRC had not shown the 2001 and 2004 approvals to be a result of omission or a mistake of fact.
- The NRR Office Director appointed an independent three member backfit review panel to review Exelon's backfit appeal. The panel reviewed documentation, interviewed staff, and held a public meeting with the licensee (ML16070A362). The NRR Office Director accepted the panel's recommended to deny the appeal, which was communicated to the licensee by letter dated May 3, 2016 (ML16095A204).
- The licensee then appealed the decision to the EDO (ML16154A254).
- As of August 2016 the appeal to the EDO remained under review by a second independent review panel.

Potential Q&As – September 21, 2016 Senate EPW Hearing

QUESTION 52.

The backfit rule provides an important means to ensure that the agency and industry resources are properly focused. However, there are several situations where the compliance exception provision is inappropriately applied. What is the Commission doing to address this flaw in the backfit process?

ANSWER.

The NRC is taking additional steps to ensure the compliance exception continues to be invoked properly and consistent with the requirements of the Backfit Rule and NRC implementing guidance.

The NRC has developed classroom and online training on backfitting, and continues to refine and expand this training. One area that will be expanded upon in the near future is providing more detailed guidance on the key elements of the two exceptions, and proper documentation of the exceptions to preparing a backfit analysis.

Additionally, the EDO has tasked the Committee to Review Generic Requirements with assessing NRC's backfit implementing guidance, training, and knowledge management.

Compliance Backfit Questions and Answers

QUESTION: What is a backfit?

ANSWER:

- A backfit is the imposition of a new regulatory requirement on a licensee or other regulated entity after prior NRC approval is provided (e.g., after issuance of a license).

QUESTION: What must the NRC do in order to impose a backfit?

ANSWER:

- The Backfit Rule (10 CFR 50.109) requires the NRC to prepare an analysis demonstrating that the backfit involves a substantial increase in protection to safety or security, and that the costs are justified by this increase in protection.
- However, the NRC need not prepare the analysis when the NRC demonstrates, in a documented evaluation, that the backfit involves either:
 - reasonable assurance of adequate protection to safety or security
 - compliance with a known and established NRC requirement or licensee commitment

QUESTION: What is NRC doing to address industry concerns about excessive use of backfits, particularly the compliance exception?

ANSWER:

- The NRC considers every potential backfit against the requirements of the Backfit Rule and the NRC's implementing guidance.
- The NRC has developed classroom and online training on backfitting, and continues to refine and expand this training. One area that will be expanded upon in the near future is to provide more detailed guidance on the key elements of the two exceptions and proper documentation to support use of the exceptions.
- The NRC is developing revised guidance on cost-benefit analysis and consideration of qualitative factors to improve the backfit analyses conducted by staff.
- The EDO tasked the CRGR (ML16133A575) with assessing the adequacy of NRC's backfit implementing guidance, training, and knowledge management.

QUESTION: Exelon recently appealed a compliance backfit. What is the NRC doing about that?

ANSWER:

- In October 2015, the NRC issued a compliance backfit that affected Exelon's Braidwood and Byron Stations because the NRC became aware that the accident analyses predicted water relief out of relief valves that are not qualified per ASME code to relieve water. The NRC

had previously approved the analyses as part of license amendments in 2001 and 2004 under the belief that the valves were, in fact, water qualified.

- Exelon exercised their right to appeal a backfit decision to the NRR Office Director. The NRR Office Director upheld the backfit based in large part on input from a backfit appeal review panel. Exelon then further appealed the backfit to the EDO.
- A final decision on whether to grant the backfit appeal is expected in late August.

From: Stuchell, Sheldon
Sent: 22 Dec 2015 07:39:09 -0500
To: Garmoe, Alex
Cc: Poole, Justin;Beaulieu, David;Wiebe, Joel
Subject: Concurrence Request for Byron/Braidwood Appeal
Attachments: IBMgetContent.docx

Alex,

I concur. In addition, I added one edit for your consideration.

Sheldon

MEMORANDUM TO: Marissa G. Bailey, Acting Director
Division of Engineering
Office of Nuclear Reactor Regulation

Anthony T. Gody, Jr, Director
Division of Reactor Safety
Region II Office

Adam S. Gendelman, Acting Deputy Director
Reactor and Materials Rulemaking
Office of the General Counsel

FROM: William M. Dean, Director
Office of Nuclear Reactor Regulation

SUBJECT CHARTER FOR BACKFIT REVIEW PANEL ON EXELON APPEAL OF
BACKFIT AFFECTING BRAIDWOOD AND BYRON STATIONS
REGARDING COMPLIANCE WITH 10 CFR 50.34(b), GDC 15, GDC 21,
GDC 29, AND THE LICENSING BASIS

In a letter dated December 8, 2015, Exelon Generation Company, LLC (EGC) appealed the imposition of a compliance backfit at the Braidwood and Byron Stations. The process by which the U.S. Nuclear Regulatory Commission (NRC) will review and respond to the appeal is documented in Management Directive [Handbook-8.4](#), "Management of Facility-Specific Backfitting and Information Collection," section III.A, "Facility-specific Backfits," as implemented by Office of Nuclear Reactor Regulation Office Instruction LIC-202, Revision 2, "Procedures for Managing Plant-Specific Backfits and 50.54(f) Information Requests," section IV.A, "Non-Adjudicatory Appeal Process."

In accordance with section IV.A of LIC-202, and after consultation with your management, I am designating Marissa Bailey as Chairman of the Backfit Review Panel, and Anthony Gody and Adam Gendelman as members of the Backfit Review Panel. The purpose of the panel is to review EGC's appeal of the NRC staff's determination that a backfit is necessary at the Braidwood and Byron Stations, and the staff's application of the compliance backfit exception.

In an October 9, 2015, letter, the NRC transmitted the results of a review of licensing basis documents for Braidwood and Byron Stations. The staff determined that Braidwood and Byron were not in compliance with General Design Criteria (GDC) 15, GDC 21, GDC 29, 10 CFR 50.34(b), and the plant-specific design bases, and invoked the compliance backfit

CONTACT: Alexander D. Garmoe, NRR/DPR
301-415-3814

exception in 10 CFR 50.109(a)(4)(i), since this differed from a previous staff position documented in a 2001 power uprate safety evaluation. On December 8, 2015, the licensee appealed the staff's decision in a letter to the Director, Office of Nuclear Reactor Regulation, which stated that the compliance exception is not applicable, and the NRC must conduct a cost-justified, substantial safety backfit analysis. The panel should review the October 9, 2015, backfit issuance, the December 8, 2015, appeal and supporting information, and provide a response to the following:

1. Determine and describe whether the 2001 power uprate and 2004 pressurizer safety valve setpoint amendment evaluations were based, at least in part, on the use of water qualified pressurizer safety valves, and if so, whether this assumption was subsequently found to be unsubstantiated.
2. Determine and describe what formed the basis of the backfit analysis.
3. Determine and describe whether the NRC attempted to identify an omission or mistake of fact.
4. Determine and describe whether the NRC's application and interpretation of GDCs 15, 21, and 29 in the 2015 backfit safety evaluation differed from previous documented positions.
5. Determine and describe whether Regulatory Issue Summary 2005-29 affected the NRC's evaluation of the abnormal operational occurrences listed in the appeal.
6. Determine and describe whether the requirements of the compliance backfit exception of 10 CFR 50.109(a)(4)(i) are met.

The responses to these questions should be sufficient to provide a recommendation of whether a backfit is necessary at Braidwood and Byron, and whether the staff's application of the compliance backfit exception is appropriate. In conducting its review, the panel may seek staff support. It should review appropriate background information including the October 9, 2015, backfit imposition letter and enclosed safety evaluation, the 2001 and 2004 safety evaluations referenced in the appeal, and the licensee's December 8, 2015, appeal to the Director, Office of Nuclear Reactor Regulation.

The panel should complete its review, and provide recommendations and written responses to the questions within 2 weeks following an associated public meeting with EGC, or by January 29, 2016, if a public meeting is declined by the licensee.

exception in 10 CFR 50.109(a)(4)(i). On December 8, 2015, the licensee appealed the staff's decision in a letter to the Director, Office of Nuclear Reactor Regulation, which stated that the compliance exception is not applicable, and the NRC must conduct a cost-justified, substantial safety backfit analysis. The panel should review the October 9, 2015, backfit issuance, the December 8, 2015, appeal and supporting information, and provide a response to the following:

1. Explain whether the 2001 power uprate and 2004 pressurizer safety valve setpoint amendment evaluations were based, at least in part, on the use of water qualified pressurizer safety valves, which was subsequently found to be unsubstantiated.
2. Explain what formed the basis of the backfit analysis.
3. Explain whether the NRC attempted to identify an omission or mistake of fact.
4. Explain whether the NRC's application and interpretation of GDCs 15, 21, and 29 in the 2015 backfit safety evaluation differed from previous documented positions.
5. Explain whether Regulatory Issue Summary 2005-29 affected the NRC's evaluation of the abnormal operational occurrences listed in the appeal.
6. Explain whether the requirements of the compliance backfit exception of 10 CFR 50.109(a)(4)(i) are met.

The responses to these questions should be sufficient to provide a recommendation of whether a backfit is necessary at Braidwood and Byron, and whether the staff's application of the compliance backfit exception is appropriate. In conducting its review, the panel may seek staff support. It should review appropriate background information including the October 9, 2015, backfit imposition letter and enclosed safety evaluation, the 2001 and 2004 safety evaluations referenced in the appeal, and the licensee's December 8, 2015, appeal to the Director, Office of Nuclear Reactor Regulation.

The panel should complete its review, and provide recommendations and written responses to the questions within 2 weeks following an associated public meeting with EGC, or by January 29, 2016, if a public meeting is declined by the licensee.

DISTRIBUTION:

MBailey, NRR	MSpencer, OGC	RidsNrrDpr	RidsNrrOd
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AGendelman, OGC	RidsNrrPMBraidwood	RidsEdoMailCenter	

ADAMS Accession Nos.: Package/ML15355A083; Acknowledgement of Appeal/ML15351A372
 Backfit Review Panel Charter/ML15355A081

OFFICE	NRR/DPR/PGCB	NRR/DPR/PGCB:LA	NRR/DPR/PGCB:BC	NRR/DORL/PLBIII-2:BC
NAME	AGarmoe	ELee	SStuchell	JPoole
DATE	12/21/15	12/21/15		
OFFICE	NRR/DORL:D	NRR/DPR:DD	OGC (NLO)	NRR/DPR:D
NAME	ABoland	AMohseni		LKokajko
DATE				

OFFICIAL RECORD COPY

From: [Oesterle, Eric](#)
To: [Garmoe, Alex](#)
Cc: [Whitman, Jennifer](#); [Alley, David](#); [Keene, Todd](#); [Billerbeck, John](#); [Farnan, Michael](#); [Wolfgang, Robert](#)
Subject: Definition of Underlying Technical Issue for 120-day Plan
Date: Monday, November 14, 2016 7:36:03 AM
Attachments: [120 day response for By Br Backfit Appeal.docx](#)
[image003.png](#)
Importance: High

Alex,

Attached please find my write-up on attempting to define the underlying technical issue for the 120-day plan to respond to the EDO on the Byron/Braidwood backfit appeal decision. It focuses primarily on the Westinghouse NSAL so I request that others have a look at this write-up and offer up and comments or edits. Thanks!

Eric R. Oesterle

Reactor Systems Branch Chief

NRR/DSS/SRXB

301-415-1014



120-day Plan Responding to EDO Tasking on Byron/Braidwood Backfit Appeal Decision

Reference: Memo from Victor M. McCree (EDO) to William M. Dean (Director, NNR), dated September 15, 2016 (ML16246A247)

Background: The memo from the EDO stated that “the Panel’s report also identifies two issues that warrant further NRC consideration. The report reveals the need to assess the treatment of the underlying technical issue described in the 1993 Westinghouse Nuclear Safety Advisory Letter (NSAL-93-013) on PSV performance after water discharge at pressurized-water reactors. In addition, given the decision communicated herein, the positions included in RIS 2005-29, as well as its proposed Revision 1, should be (re)assessed through the appropriate generic process to ensure they receive appropriate backfit consideration. You are requested to inform me within 120 days of your plan to respond to these issues.”

Underlying technical issue associated with Westinghouse NSAL-93-013:

The underlying technical issue associated with NSAL-93-013 is qualification of PSVs for water discharge to ensure adequate performance in response to an Inadvertent Operation of ECCS (IOECCS) at power event. However, there is a multi-step process that must be considered in the analysis of an IOECCS event before arriving ultimately at performance of the PSV with respect to water discharge and, more specifically, the ability of the PSV to reseal following liquid discharge.

To ensure that the IOECCS event (Condition II) does not escalate to an unisolable breach of the RCS event (Condition III) as the result of an additional failure the analysis of the event involves the preventing the pressurizer from going solid. To preclude the pressurizer from going solid the following actions were credited:

- a) Operator action to secure high head safety injection pumps prior to pressurizer fill
- b) If the operator action was not timely, provide pressure relief through PORV(s)
- c) If block valves were maintained normally closed during power operation, amend TS to allow at least one block valve to be open during power operation so that a PORV could be used for this event
- d) If block valves were maintained normally closed during power operation, allow discharge through PSVs, however PSVs must be qualified for liquid discharge
- e) If PSVs were not qualified for liquid discharge, replace or upgrade PSVs for liquid discharge
- f) Discharge piping for the PORVs/PSVs all the way to the pressurizer relief tank must be qualified for liquid discharge

Each of these steps associated with the ECCS must be considered for every PWR licensee, including the equivalent mass addition event analysis for those PWR licensees with CE and B&W nuclear steam supply systems. The final technical issue that must be considered is what is considered acceptable by the NRC for qualification of PSVs for liquid discharge if these PSVs are credited for reseating following liquid discharge such that an IOECCS event (Condition II) does not escalate to a small break LOCA (Condition III) as a result of the failure of the PSV to reseal.

From: Garmoe, Alex
Sent: 12 Aug 2016 17:20:03 +0000
To: Beaulieu, David
Subject: Draft Compliance Backfit One Pager
Attachments: Compliance Backfit One Pager Updated.docx

Dave,

Attached is a draft compliance backfit one-pager. I have not run it by Geary or anyone else in OGC yet. Please let me know if you have any comments by COB Monday 8/15 so I have time to get a quick check from Geary then get it to Mike Mahoney by the requested 8//17 date.

Thanks!



Alexander D. Garmoe

Senior Project Manager

Generic Communications Branch (PGCB)
Division of Policy and Rulemaking (DPR)
Office of Nuclear Reactor Regulation (NRR)
Alex.Garmoe@nrc.gov | 301-415-3814

Compliance Exception to the Backfit Rule

Key Messages

- **The Backfit Rule (10 CFR 50.109) allows the imposition of new NRC regulatory requirements after regulatory approval is provided, as long as the NRC prepares a backfit analysis demonstrating that the backfit involves a substantial increase in protection to safety or security, and that the costs are justified by this increase in protection.**
- **However, when the NRC demonstrates in a documented evaluation that a backfit involves compliance with an established NRC requirement or licensee commitment the NRC need not prepare a backfit analysis (the compliance exception).**
- **Industry has been increasingly raising concerns that NRC is invoking the compliance exception without a sufficient documented basis, and one licensee recently appealed a compliance backfit to the EDO.**

Facts

- A backfit is the imposition of a new NRC regulatory requirement on a licensee or other regulated entity after an NRC regulatory approval is provided (e.g., after issuance of a license).
- The Backfit Rule (10 CFR 50.109) requires the NRC to prepare a backfit analysis demonstrating that the backfit involves a substantial increase in protection to safety or security, and that the costs are justified by this increase in protection.
- However, the NRC need not prepare the backfit analysis when the NRC demonstrates, in a documented evaluation, that the backfit involves either:
 - reasonable assurance of adequate protection to safety or security
 - compliance with an established NRC requirement or a licensee commitment
- NRC's backfitting guidance is contained in NUREG-1409, "Backfitting Guidelines," Management Directive 8.4, "Management of Facility-specific Backfitting and Information Collection," and Office-level implementing instructions.
- The NRC is taking additional steps to ensure the compliance exception continues to be invoked properly and consistent with the requirements of the Backfit Rule and NRC implementing guidance.
- The NRC has developed classroom and online training on backfitting, and continues to refine and expand this training. One area that will be expanded upon in the near future is providing more detailed guidance on the key elements of the two exceptions, and proper documentation of the exceptions to preparing a backfit analysis.
- The EDO has tasked CRGR (ML16133A575) with assessing NRC's backfit implementing guidance, training, and knowledge management.
- A compliance backfit imposed on Braidwood and Byron (ML14225A871) was appealed by Exelon first to the NRR Office Director (ML15342A112), who upheld the backfit (ML16095A204), then appealed to the EDO (ML16154A254), whose review is ongoing as of August 2016.

From: Wiebe, Joel
Sent: 9 Dec 2015 22:40:44 +0000
To: Poole, Justin;Billerbeck, John;Whitman, Jennifer;Jackson, Christopher
Subject: Draft One-Pager Regarding the Braidwood/Byron Stations Backfit
Attachments: Braidwood-Byron Backfit.docx

From: [Whitman, Jennifer](#)
To: [Billerbeck, John](#)
Subject: EPRI Report and TMI action items NUREG
Date: Tuesday, July 19, 2016 1:29:48 PM

The only EPRI report that I could find is saved on the g drive and I attached a shortcut.

Also the TMI action items NUREG.

Jennifer Whitman

Acting Technical Assisstant

NRR/DSS

Office: O10 – H22

Phone: (301) 415-3253

From: [Clark, Theresa](#)
To: [Holahan, Gary](#); [West, Steven](#); [Scarborough, Thomas](#); [Spencer, Michael](#); [Lubinski, John](#); [Alley, David](#); [Billerbeck, John](#)
Subject: Exelon backfit appeal discussion with NRR/DE
Start: Wednesday, July 20, 2016 12:30:00 PM
End: Wednesday, July 20, 2016 1:30:00 PM
Location: O-16B2

Hi all,

As noted by email, following their meeting with DSS earlier today, the EDO-level appeal panel for the Exelon backfit (Byron/Braidwood PORV/PSV) would like to meet with DE management/staff for an informal discussion of your review role in the 2015 backfit letter and associated inputs.

I know this isn't a perfect time for everyone so I appreciate your patience and willingness to meet. Thanks so much!

Theresa

From: [Whitman, Jennifer](#)
To: [Oesterle, Eric](#); [Taylor, Robert](#); [McGinty, Tim](#)
Subject: RE: Exelon's backfit appeal is successful
Date: Friday, September 30, 2016 10:30:00 AM

He also called and left me a message asking to call him back.

Jen

From: Oesterle, Eric
Sent: Friday, September 30, 2016 10:30 AM
To: Taylor, Robert <Robert.Taylor@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>
Cc: Whitman, Jennifer <Jennifer.Whitman@nrc.gov>
Subject: FW: Exelon's backfit appeal is successful

We might want to have an internal discussion to see if having a telecom with Sam in response to his email is an appropriate response.

Eric

From: Whitman, Jennifer
Sent: Friday, September 30, 2016 10:06 AM
To: Oesterle, Eric <Eric.Oesterle@nrc.gov>
Subject: FW: Exelon's backfit appeal is successful

I got this from Sam. Not quite sure if or how to respond.

From: Samuel Miranda [<mailto:sm0973@gmail.com>]
Sent: Thursday, September 29, 2016 9:06 PM
Subject: [External_Sender] Exelon's backfit appeal is successful

I am disappointed that the EDO has just granted Exelon's appeal of the Backfit. In so doing, it has overruled the NRR appeal board, and set a precedent for using PSVs to deal with Condition II mass addition events. This was done without a public hearing. It is all in the listed documents. Pay particular attention to double-speak in the last one.

(ADAMS No. ML16236A202)
(ADAMS No. ML16246A247)
(ADAMS No. ML16243A067)
(ADAMS No. ML16246A150)
(ADAMS No. ML16236A208)

Please call me to discuss.

301-585-3289

From: Gullott, David M.:(GenCo-Nuc)
Sent: 16 Sep 2016 16:01:29 +0000
To: Wiebe, Joel;Krejcie, Jessica:(GenCo-Nuc);Bauer, Joseph A.:(GenCo-Nuc)
Subject: [External_Sender] RE: Backfit Appeal Review Panel Findings

Thanks.

From: Wiebe, Joel [mailto:Joel.Wiebe@nrc.gov]
Sent: Friday, September 16, 2016 11:01 AM
To: Gullott, David M.:(GenCo-Nuc); Krejcie, Jessica:(GenCo-Nuc); Bauer, Joseph A.:(GenCo-Nuc)
Subject: [EXTERNAL] Backfit Appeal Review Panel Findings

This will be sent out on listserve, today.

Not sure if you already have a copy or not.

Joel

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From: Samuel Miranda
Sent: 26 Sep 2016 12:40:28 -0500
To: Whitman, Jennifer
Subject: [External_Sender] RE: Re: Backfit Appeal Decision

I am updating and expanding my paper for publication in the Journal of Nuclear Engineering. The EDO's decision means there is no need to analyze IOECCS. I wonder where NRR will go from here.

On Sep 26, 2016 12:05 PM, "Whitman, Jennifer" <Jennifer.Whitman@nrc.gov> wrote:

The position in the SRP remains the current agency position. NRR has been tasked with proposing a path to address the PORV/PSV water qualification issue. There will be more to come on this topic.

From: Samuel Miranda [mailto:sm0973@gmail.com]
Sent: Monday, September 26, 2016 1:02 PM
To: Whitman, Jennifer <Jennifer.Whitman@nrc.gov>
Subject: [External_Sender] Re: Backfit Appeal Decision

Thanks. All is not well. So, are you now going to assume unqualified PORVs will reset after having relieved water?

On Sep 26, 2016 9:39 AM, "Whitman, Jennifer" <Jennifer.Whitman@nrc.gov> wrote:

Hey Sam,

Just wanted to let you know that the [EDO's decision](#) on the backfit appeal is now available in ADAMS.

Hope all is well!

Jennifer Whitman

Reactor Systems Engineer

NRR/DSS/SRXB

Office: O10 – D15

Phone: [\(301\) 415-3253](tel:3014153253)

From: Lubinski, John
Sent: 29 Sep 2016 05:48:13 -0600
To: Davidson, Evan
Cc: Alley, David; Ross-Lee, MaryJane
Subject: FW: ACTION: 120-day Plan for B/B Backfit Issue

From: Taylor, Robert
Sent: Monday, September 26, 2016 11:04 AM
To: Oesterle, Eric <Eric.Oesterle@nrc.gov>
Cc: Whitman, Jennifer <Jennifer.Whitman@nrc.gov>; Alley, David <David.Alley@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>; Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>; Anderson, Shaun <Shaun.Anderson@nrc.gov>
Subject: ACTION: 120-day Plan for B/B Backfit Issue

Eric,

Please take the lead in coordinating with DE regarding what the path forward should be in response to Vic McCree's direction to develop a plan within 120 days. I would suggest that you set a goal of having an early discussion with division management on the potential options either next week or the following week. That will let you get early perspectives and thoughts on how to proceed before you go too far in developing options.

Please let me know if you have any questions.

Regards,
Rob

From: Wiebe, Joel
Sent: 19 Oct 2016 13:12:20 +0000
To: Miller, Ed
Cc: Orf, Tracy
Subject: FW: ACTION: EDO Action Item Assignment for DORL

I keep getting these, but I am not taking any action on this. It should be with the owner of the RIS, which is DSS/SRXB.

Joel

From: RidsNrrDorl Resource
Sent: Wednesday, October 19, 2016 8:48 AM
To: Wiebe, Joel <Joel.Wiebe@nrc.gov>
Subject: FW: ACTION: EDO Action Item Assignment for DORL

From: PMDA [<mailto:SVCportaladmin@nrc.gov>]
Sent: Wednesday, September 28, 2016 11:43 AM
To: RidsNrrDorl Resource <RidsNrrDorl.Resource@nrc.gov>; Orf, Tracy <Tracy.Orf@nrc.gov>; Cox, Linda <Linda.Cox@nrc.gov>
Cc: Walker, Sandra <Sandra.WalkerNRR@nrc.gov>
Subject: ACTION: EDO Action Item Assignment for DORL

Ticket No.: [OEDO-16-00649](#)
Assigned To: DORL
Subject: Appeal of Backfit Imposed in Braidwood and Byron Stations
Due Date: **1/16/2017**

NRR to provide a plan in 120 days. See ML16246A247 for details.

This document is publicly available in ADAMS

Submit a request to [close this ticket](#).

From: Poole, Justin
Sent: 22 Dec 2015 12:09:13 -0500
To: Wiebe, Joel
Subject: FW: ACTION: Request DORL's concurrence

fyi

From: Wilson, George
Sent: Tuesday, December 22, 2015 12:06 PM
To: Garmoe, Alex <Alex.Garmoe@nrc.gov>
Cc: Boland, Anne <Anne.Boland@nrc.gov>; Orf, Tracy <Tracy.Orf@nrc.gov>; Krohn, Paul <Paul.Krohn@nrc.gov>; Poole, Justin <Justin.Poole@nrc.gov>
Subject: RE: ACTION: Request DORL's concurrence

DORL concurs on the charter

George Wilson
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
USNRC
301-415-1711
Office O8E4

From: Orf, Tracy
Sent: Tuesday, December 22, 2015 9:46 AM
To: Wilson, George <George.Wilson@nrc.gov>; Krohn, Paul <Paul.Krohn@nrc.gov>
Cc: Boland, Anne <Anne.Boland@nrc.gov>; Lamb, Taylor <Taylor.Lamb@nrc.gov>
Subject: FW: ACTION: Request DORL's concurrence

It looks like Justin already concurred. Please respond by email with concurrence to Alex Garmoe by 12/28.

Thanks,

Trace

From: Dion, Jeanne
Sent: Tuesday, December 22, 2015 9:39 AM
To: Garmoe, Alex <Alex.Garmoe@nrc.gov>; Orf, Tracy <Tracy.Orf@nrc.gov>; RidsNrrDorl Resource <RidsNrrDorl.Resource@nrc.gov>
Cc: Beaulieu, David <David.Beaulieu@nrc.gov>; Wiebe, Joel <Joel.Wiebe@nrc.gov>; Wertz, Trent <Trent.Wertz@nrc.gov>
Subject: RE: ACTION: Request DORL's concurrence

Thanks Alex,
I am sending your concurrence request to DORL with a due date of Dec 28.

Jeanne

From: Garmoe, Alex

Sent: Tuesday, December 22, 2015 8:57 AM

To: Dion, Jeanne <Jeanne.Dion@nrc.gov>

Cc: Beaulieu, David <David.Beaulieu@nrc.gov>; Wiebe, Joel <Joel.Wiebe@nrc.gov>; Wertz, Trent <Trent.Wertz@nrc.gov>

Subject: ACTION: Request DORL's concurrence

Jeanne,

Trent Wertz's auto-reply referred me to you in his absence. I have a short-turnaround document that is ready for DORL's division-level concurrence. The document, available in ADAMS as [ML15355A081](#) and attached to this e-mail, is the Charter for a Backfit Review Panel that is being assigned to review an appeal by Exelon for a backfit that was imposed on Braidwood and Byron. The Charter is in the form of a memo from Bill Dean to the individuals he will designate as Panel members. Background information is available in ADAMS Package [ML15355A083](#) and Joel Wiebe, Justin Poole, Paul Krohn, and Anne Boland are familiar with the issue.

The process we are following is documented in LIC-202 and includes fairly short duration timelines (i.e. a public meeting within 4 weeks of the appeal and the backfit review panel's decision forwarded to the licensee within 4 weeks of the public meeting). As a result, I would greatly appreciate DORL's comments and electronic concurrence (Anne, George, or Paul) by **Monday, December 28**. If this request can't be met please let me know and we can discuss alternate options. Please ensure Dave Beaulieu is copied on the reply.

If you have any questions please don't hesitate to ask.



Alexander D. Garmoe

Senior Project Manager

Generic Communications Branch (PGCB)
Division of Policy and Rulemaking (DPR)
Office of Nuclear Reactor Regulation (NRR)
Alex.Garmoe@nrc.gov | 301-415-3814

From: Garmoe, Alex
Sent: 15 Sep 2016 14:04:39 +0000
To: Bailey, Marissa;Gendelman, Adam;Gody, Tony
Subject: FW: backfit appeal documents signed

Greetings,

Vic has signed the response letters for the second-level backfit appeal by Exelon. Links to the letters are included in the e-mail chain below. It is expected that they will be made public today.

Alex

From: Keene, Todd
Sent: Thursday, September 15, 2016 10:01 AM
To: Stuchell, Sheldon
Cc: Garmoe, Alex
Subject: FW: backfit appeal documents signed

I just received this.

Todd

From: Clark, Theresa
Sent: Thursday, September 15, 2016 9:59 AM
To: Dean, Bill <Bill.Dean@nrc.gov>; Evans, Michele <Michele.Evans@nrc.gov>; McDermott, Brian <Brian.McDermott@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>; Correia, Richard <Richard.Correia@nrc.gov>
Cc: Holahan, Gary <Gary.Holahan@nrc.gov>; Keene, Todd <Todd.Keene@nrc.gov>
Subject: FYI: backfit appeal documents signed

Good morning, all!

This morning, Vic signed the three documents associated with the Byron/Braidwood backfit appeal. They are being processed now, and we expect that they (along with the panel documents referenced within) will be made publicly available in ADAMS later today. Please let me know if you have any questions. Thanks!

- Letter responding to Exelon: [ML16243A067](#)
- Letter responding to NEI: [ML16246A150](#)
- Memo to NRR: [ML16246A247](#)

--

Theresa Valentine Clark
Executive Technical Assistant (Reactors)
U.S. Nuclear Regulatory Commission
Theresa.Clark@nrc.gov | 301-415-4048 | O-16E22

From: Wiebe, Joel
Sent: 7 Mar 2016 14:27:37 +0000
To: Jandovitz, John; McGhee, James (James.McGhee@nrc.gov); Draper, Jason; Benjamin, Jamie; Betancourt, Diana
Subject: FW: Backfit Appeal Meeting Info

From: Garmoe, Alex
Sent: Monday, March 07, 2016 9:17 AM
To: Wiebe, Joel <Joel.Wiebe@nrc.gov>
Subject: Backfit Appeal Meeting Info

Joel,

The call-in information for the backfit appeal public meeting is below. In addition, the meeting slides were recently added to ADAMS as ML16062A422. Just a reminder that the meeting starts at 1:30pm eastern.

These slides are publicly available in ADAMS

Dial-in number: 1-888-730-9143

Passcode (b)(6)



Alexander D. Garmoe

Senior Project Manager

Generic Communications Branch (PGCB)
Division of Policy and Rulemaking (DPR)
Office of Nuclear Reactor Regulation (NRR)
Alex.Garmoe@nrc.gov | 301-415-3814

From: Whitman, Jennifer
Sent: 24 Aug 2016 14:33:55 -0400
To: Garmoe, Alex
Subject: FW: Backfit Appeal Review Panel Findings Associated with Byron & Braidwood
Attachments: Fwd: Exelon Backfit Appeal Panel Report

FYI

From: McGinty, Tim
Sent: Wednesday, August 24, 2016 2:23 PM
To: Whitman, Jennifer
Cc: Taylor, Robert ; Hickey, James
Subject: Fwd: Backfit Appeal Review Panel Findings Associated with Byron & Braidwood

From: "Sprogeris, Patricia" <Patricia.Sprogeris@nrc.gov>
Subject: Backfit Appeal Review Panel Findings Associated with Byron & Braidwood
Date: 24 August 2016 13:41
To: "RidsNrrOd Resource" <RidsNrrOd.Resource@nrc.gov>, "Correia, Richard" <Richard.Correia@nrc.gov>, "Mizuno, Geary" <Geary.Mizuno@nrc.gov>, "Lewis, Robert" <Robert.Lewis@nrc.gov>, "McGinty, Tim" <Tim.McGinty@nrc.gov>, "RidsNroOd Resource" <RidsNroOd.Resource@nrc.gov>, "Johnson, Michael" <Michael.Johnson@nrc.gov>, "Lubinski, John" <John.Lubinski@nrc.gov>, "Mayfield, Michael" <Michael.Mayfield@nrc.gov>, "Tracy, Glenn" <Glenn.Tracy@nrc.gov>, "RidsResOd Resource" <RidsResOd.Resource@nrc.gov>, "RidsOgcMailCenter Resource" <RidsOgcMailCenter.Resource@nrc.gov>

Date: August 24, 2016

From: Gary M. Holahan

K. Steven West

Thomas G. Scarbrough

Michael A. Spencer

Theresa Valentine Clark

[View ADAMS P8 Properties ML16236A198](#)

[Open ADAMS P8 Package \(Backfit Appeal Review Panel Findings \(Byron and Braidwood\)\)](#)

Thank you, Patti

Patti Sprogeris

Assistant to Michael R. Johnson

Office of the Executive Director for Operations

301-415-1713

This document is publicly available in ADAMS

From: McGinty, Tim
Sent: 24 Aug 2016 14:24:58 -0400
To: Whitman, Jennifer
Cc: Taylor, Robert;Hickey, James
Subject: Fwd: Exelon Backfit Appeal Panel Report

From: "Dean, Bill"
Subject: Re: Exelon Backfit Appeal Panel Report
Date: 24 August 2016 12:49
To: "Holahan, Gary" , "McDermott, Brian" , "Evans, Michele" , "McGinty, Tim" , "Lubinski, John"
Cc: "McCree, Victor" , "Johnson, Michael" , "West, Steven" , "Clark, Theresa" , "Scarborough, Thomas" , "Spencer, Michael" , "Uhle, Jennifer" , "Bailey, Marissa"

Ok. Thanks for the due diligence and the efforts of your team. Guess this exemplifies that how the agency implements the backfit rule is an area that warrants the CRGR effort to make the backfiring landscape clearer as similarly intelligent and experienced staff and managers would disagree with this outcome.

On: 24 August 2016 12:31, "Holahan, Gary" wrote:
NRR,

The Exelon backfit appeal panel delivered its report to the EDO and DEDO this morning (ML16236A202 and ML16236A20). The panel reviewed the NRR response to the panel's preliminary findings, but could not agree with the NRR positions. The report therefore recommends to the EDO that he support the Exelon appeal. The report will be distributed today at the EDO's request.

The EDO will make his final decision after studying the report and considering any feedback from NRR and other stakeholders.

The panel is available to discuss the report with you and respond to your questions,
Gary

Both records (the latter is actually ML16236A208) are publicly available in ADAMS.
--

From: Wiebe, Joel
Sent: 2 Jun 2016 20:10:23 +0000
To: Stuchell, Sheldon
Subject: FW: Braidwood/Byron Backfit Appeal to EDO
Attachments: RS-16-134.pdf

The attachment is publicly available in ADAMS as ML16154A254.

Alex is out.

Joel

From: Wiebe, Joel
Sent: Thursday, June 02, 2016 4:06 PM
To: Miller, Ed <Ed.Miller@nrc.gov>; Boland, Anne <Anne.Boland@nrc.gov>; Duncan, Eric <Eric.Duncan@nrc.gov>; Jandovitz, John <John.Jandovitz@nrc.gov>; McGhee, James (James.McGhee@nrc.gov) <James.McGhee@nrc.gov>; Benjamin, Jamie <Jamie.Benjamin@nrc.gov>; Betancourt, Diana <Diana.Betancourt@nrc.gov>; Draper, Jason <Jason.Draper@nrc.gov>; Garmoe, Alex <Alex.Garmoe@nrc.gov>
Subject: Braidwood/Byron Backfit Appeal to EDO

From: Wiebe, Joel
Sent: 3 Jun 2016 12:39:20 +0000
To: Hauser, Jennifer
Subject: FW: Braidwood/Byron Backfit Appeal to EDO
Attachments: RS-16-134.pdf

The attachment is publicly available in
ADAMS as ML16154A254.

Jenny,

Sorry, this should have gone to you also.

Joel

From: Wiebe, Joel
Sent: Thursday, June 02, 2016 4:06 PM
To: Miller, Ed <Ed.Miller@nrc.gov>; Boland, Anne <Anne.Boland@nrc.gov>; Duncan, Eric <Eric.Duncan@nrc.gov>; Jandovitz, John <John.Jandovitz@nrc.gov>; McGhee, James (James.McGhee@nrc.gov) <James.McGhee@nrc.gov>; Benjamin, Jamie <Jamie.Benjamin@nrc.gov>; Betancourt, Diana <Diana.Betancourt@nrc.gov>; Draper, Jason <Jason.Draper@nrc.gov>; Garmoe, Alex <Alex.Garmoe@nrc.gov>
Subject: Braidwood/Byron Backfit Appeal to EDO

From: Mcginty, Tim
Sent: 18 Jul 2016 17:14:41 -0400
To: Lubinski, John
Cc: Taylor, Robert;Whitman, Jennifer;Mcdermott, Brian;Hickey, James;Oesterle, Eric;Ross-Lee, MaryJane;Alley, David
Subject: FW: Exelon backfit discussion
Attachments: 12091997 letter (LAR supplement) A1469 296-297.PDF, 12191997 letter A1679 287-288.PDF, 05291998 LAR A3765 275-301.PDF, 05131999 RAI A8035 313-316.PDF, 07161999 withdrawal letter A8671 349-354.PDF

John – as we discussed this afternoon, here is some of the background information referenced and gathered by the panel. Scroll down to the bottom of the email for more info that the panel has gathered.

I will ask Shari to schedule a meeting with Jennifer, myself, you and Dave Alley tomorrow. P.S. In our June 12, 2014 backfit memo (ML14078A619) from Chris to Travis in DORL, John Billerbeck was the DE/EPNB staff member that concurred and Robert Wolfgang concurred for Tim Lupold.

Tim

From: Clark, Theresa
Sent: Monday, July 18, 2016 1:57 PM
To: Whitman, Jennifer
Cc: Mcginty, Tim ; Holahan, Gary ; West, Steven ; Scarbrough, Thomas ; Spencer, Michael
Subject: RE: Exelon backfit discussion

Hi there! As promised, here are the microfiche references from the earlier Byron/Braidwood amendment requests we were discussing today. When Gary mentioned the printouts I forgot I had already saved copies from the scanner in the library. So, you get the copies too ☺ -- and as long as we don't add this version to ADAMS vs the official copy the records people don't get annoyed. The filenames show the microfiche addresses in case you need them.

- 12/9/1997 letter providing an amendment supplement identifying an issue with the spurious SI analysis
- 12/19/1997 letter providing path forward on spurious SI (planning amendment on automatic action of PORVs)
- 5/29/1998 LAR regarding automatic action of PORVs
- 5/13/1999 electrical RAI on the LAR above
- 7/16/1999 withdrawal of LAR above and RAI response

If you come across EPRI NP-2770 Volume 6 (Crosby safety valves) or NP-2670 (PORV test reports), please let us know. Thanks again!

--

Theresa Valentine Clark
Executive Technical Assistant (Reactors)
U.S. Nuclear Regulatory Commission
Theresa.Clark@nrc.gov | 301-415-4048 | O-16E22
-----Original Appointment-----

From: Clark, Theresa
Sent: Thursday, July 14, 2016 5:08 PM
To: Clark, Theresa; Mcginty, Tim; DSSCAL Resource; Holahan, Gary; West, Steven; Scarbrough, Thomas; Spencer, Michael
Cc: Whitman, Jennifer

Subject: Exelon backfit discussion

When: Monday, July 18, 2016 12:30 PM-1:30 PM (UTC-05:00) Eastern Time (US & Canada).

Where: HQ-OWFN-16B06-12p

Hi Tim,

Thanks for being willing to meet with the EDO's appeal panel for the Exelon backfit. As we discussed on the phone, you can bring staff if you would like to. However, you may not feel the need at this point—we are intending for this to be a casual conversation about the technical issues that led to the backfit and aren't sending any preparatory materials/questions. If we need further discussions (e.g., with particular staff) after this we can certainly do that. Also—I know this isn't a great time (and Steve has a potential conflict) but getting another time in the next two weeks was nigh on impossible. Let me know if it is really bad timing for you. Thanks!

Background References:

- Appeal panel charter: [ML16173A311](#)
- 6/16/16 NEI letter supporting Exelon backfit appeal to EDO: [attached, not yet in ADAMS]
- 6/2/16 Exelon backfit appeal to EDO: [ML16154A254](#)
- 5/3/16 NRR backfit appeal decision: [ML16095A204](#)
- 12/8/2015 Exelon backfit appeal to NRR: [ML15342A112](#)
- 10/9/2015 NRC backfit letter: [ML14225A871](#)
- 8/26/04 pressurizer safety valve setpoint safety evaluation: [ML042250531](#)
- 5/4/01 stretch power uprate safety evaluation: [ML033040016](#)

The NEI letter is publicly available in ADAMS as ML16246A150

All other documents are publicly available in ADAMS under the specified accession numbers

From: Garmoe, Alex
Sent: 4 May 2016 15:48:48 -0400
To: Wiebe, Joel
Subject: FW: Public Talking Points - Braidwood/Byron Backfit Appeal
Attachments: Backfit Appeal Public Talking Points.docx

Joel – the backfit response letter to Exelon should be public this afternoon or tomorrow morning at the latest. Bill Dean has already called and spoken with Brad Fewell about the coming letter. The attached file has ML numbers for associated documents.

Alex

From: Garmoe, Alex
Sent: Wednesday, May 04, 2016 2:21 PM
To: Burnell, Scott <Scott.Burnell@nrc.gov>; McIntyre, David <David.McIntyre@nrc.gov>; Dean, Bill <Bill.Dean@nrc.gov>; Evans, Michele <Michele.Evans@nrc.gov>; McDermott, Brian <Brian.McDermott@nrc.gov>; Clark, Theresa <Theresa.Clark@nrc.gov>; Lund, Louise <Louise.Lund@nrc.gov>; Gavrilas, Mirela <Mirela.Gavrilas@nrc.gov>; Stuchell, Sheldon <Sheldon.Stuchell@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>; Taylor, Robert <Robert.Taylor@nrc.gov>; Bailey, Marissa <Marissa.Bailey@nrc.gov>; Gendelman, Adam <Adam.Gendelman@nrc.gov>; Gody, Tony <Tony.Gody@nrc.gov>
Subject: Public Talking Points - Braidwood/Byron Backfit Appeal

Good afternoon,

The NRC's response to Exelon's compliance backfit appeal is expected to be publicly issued either late this afternoon or tomorrow morning. Following release of the response letter to Exelon, NRC's response to NEI's letter in support of the Exelon appeal will be publicly issued. The attached talking points have been coordinated with DPR, DSS, and OGC and can be used in the event of stakeholder interest.

If you have any questions please don't hesitate to contact Marissa Bailey, Backfit Review Panel Chair, or myself.



Alexander D. Garmoe

Senior Project Manager

Generic Communications Branch (PGCB)
Division of Policy and Rulemaking (DPR)
Office of Nuclear Reactor Regulation (NRR)
Alex.Garmoe@nrc.gov | 301-415-3814

Public Talking Points Braidwood/Byron Backfit Appeal

Backfitting

Backfitting is a modification required of a facility as a result of a new or changed NRC requirement or NRC Staff position or interpretation.

NRC's backfit rule (10 CFR 50.109) ordinarily requires a backfit analysis to demonstrate that the proposed backfit represents a cost-justified substantial increase in safety/security.

There are three cases, or exceptions, where a backfit analysis is not required for backfitting. One of these exceptions is when the modification is necessary to bring a facility into compliance with NRC requirements (compliance exception).

The compliance exception can be used when NRC approved something that should not have been approved as a result of omitted information or a mistake of fact.

This Backfit

Certain events can occur that result in the reactor coolant system over-filling with water, which pushes relief valves open. Once the excess water addition is stopped, the relief valves must re-close to prevent an uncontrolled leak.

During review of a recent power uprate request, the NRC determined that Exelon did not have information necessary to show that the relief valves would re-close after relieving water. The licensee is required to show that the valves would re-close and not create a worse event by sticking open.

In 2001 and 2004 the NRC had mistakenly approved license amendment requests that predicted the valves would relieve water and re-close, even though Exelon did not, at the time, have sufficient information to show that the valves would re-close.

The NRC issued a backfit in October 2015 since Exelon's safety analyses predict the valves will relieve water in certain events and they have not shown that the valves would re-close to prevent a worse event.

The Appeal

Exelon appealed the NRC's use of the compliance exception to the backfit rule, instead believing that the NRC needed to perform a backfit analysis, because they believed NRC had not shown the 2001 and 2004 incorrect decisions to be a result of omission or a mistake of fact.

The NRR Office Director appointed an independent three member backfit review panel to review Exelon's backfit appeal. A public meeting to discuss the appeal was held on March 7, 2016.

The backfit review panel confirmed that the initial backfit was issued in accordance with the backfit rule and NRC implementing guidance, therefore the appeal was denied.

Related Public Documents

ML14225A871: Backfit Issuance

ML15342A112: Backfit Appeal

ML15355A081: Review Panel Charter

ML16027A352: NEI Letter Supporting Appeal

ML16070A362: Public Meeting Summary

ML16095A204: Response to Exelon Appeal

ML16095A264: Response to NEI Letter

From: Miller, Ed
Sent: 12 Sep 2016 14:20:55 -0400
To: Orf, Tracy;Wiebe, Joel
Subject: FW: REQUEST: assistance with contacts / Listserv

Joel, can you pull the contact info for Bryan Hanson and Brad Fewell that Teresa requested.

Trace, I'm assuming that, from a listserv perspective, we could handle a letter that didn't originate in DORL. Is there anything special they would need to do or should they just mimic the cc via listserv that we usually use?

Ed

From: Lee, Erika
Sent: Monday, September 12, 2016 1:35 PM
To: Keene, Todd <Todd.Keene@nrc.gov>; Clark, Theresa <Theresa.Clark@nrc.gov>; Wiebe, Joel <Joel.Wiebe@nrc.gov>; Baxter, Angela <Angela.Baxter@nrc.gov>; Stuchell, Sheldon <Sheldon.Stuchell@nrc.gov>
Cc: Rohrer, Shirley <Shirley.Rohrer@nrc.gov>; Miller, Ed <Ed.Miller@nrc.gov>
Subject: RE: REQUEST: assistance with contacts / Listserv

Todd,

It sounds like this letter would only go to those individuals who are subscribed to receive Byron/Braidwood operating reactor correspondence. That list is owned by DORL, and it's different from the list we use to send out generic communications, which is owned by DPR. Unfortunately, it's impossible to tell exactly who is subscribed to the Byron/Braidwood list since the individual's name isn't a required field, but there a few people (4 or 5) who are required to stay on the subscription list, and I believe Congress mandates who those "required" recipients are. In order to get the names of those "required" recipients, you might be able to work with Shirley Rohrer, Licensing Assistant for branch 3-2 in DORL.

I'm copying Ed Miller, DORL's acting branch chief on this correspondence for his awareness. Let me know if you need anything else, or need additional clarification.

Thanks,
Erika

From: Keene, Todd
Sent: Monday, September 12, 2016 11:19 AM
To: Clark, Theresa <Theresa.Clark@nrc.gov>; Wiebe, Joel <Joel.Wiebe@nrc.gov>; Lee, Erika <Erika.Lee@nrc.gov>; Baxter, Angela <Angela.Baxter@nrc.gov>; Stuchell, Sheldon <Sheldon.Stuchell@nrc.gov>
Subject: Re: REQUEST: assistance with contacts / Listserv

Theresa,
Erika Lee or Angie Baxter are the best points of contact for the listserv process.

Todd

----- Original Message -----

From: "Clark, Theresa" <Theresa.Clark@nrc.gov>

Date: Mon, September 12, 2016 11:02 AM -0400

To: "Keene, Todd" <Todd.Keene@nrc.gov>, "Wiebe, Joel" <Joel.Wiebe@nrc.gov>

Subject: REQUEST: assistance with contacts / Listserv

Hi there – the EDO is finalizing his decision on the Byron/Braidwood backfit appeal, and his decision documents will include a letter to Exelon that will need to be Listserved. Would you guys (or perhaps one of the LAs) be able to help with that? This would likely be tomorrow.

Also, if possible, we would like to get contact phone #s and emails for Bryan Hanson and Brad Fewell. Could you please send me those? Vic would like to have a call with them to communicate the decision when complete.

Thank you!

--

Theresa Valentine Clark

Executive Technical Assistant (Reactors)

U.S. Nuclear Regulatory Commission

Theresa.Clark@nrc.gov | 301-415-4048 | O-16E22

From: Wiebe, Joel
Sent: 11 Feb 2016 13:01:39 +0000
To: Jandovitz, John; Benjamin, Jamie; McGhee, James (James.McGhee@nrc.gov); Draper, Jason; Betancourt, Diana
Cc: Poole, Justin
Subject: FW: Status of Bulletin 2012-01 - Design Vulnerability in Electric Power Systems

In response to the take-away regarding whether or not we will require the equipment fixing the issue to be "Safety Related," I looked at the available information including the Branch Technical Position published in the federal register and the latest version of the proposed Backfit document. The word "Safety Related" is not used, but Class 1E is used, which would give it all the bells and whistles for "Safety Related." However, the information I reviewed is confusing. It is not clear if everything is required to be Class 1E. The public comments I reviewed also stated the information was confusing. It appears that, depending on where the equipment is located, it could be Class 1E or not. For example, if it is located in the non-class 1E part of the off-site power supply, it would not need to be class 1E. If it was located in the Class 1E emergency busses, it would need to be Class 1E. The caveat was that if it is located in the off-site power supply, the licensee would be required to show that the issue was corrected.

Anyway, I don't think we will get additional firm information until the DE staff is aligned internally as mentioned below.

Joel

From: Sanders, Serita
Sent: Thursday, February 11, 2016 7:48 AM
To: Wiebe, Joel <Joel.Wiebe@nrc.gov>
Subject: RE: Status of Bulletin 2012-01 - Design Vulnerability in Electric Power Systems

That's a good question, I'd like to know too. The DE staff is aligning internally and until I get the "word," I won't know firm dates. I'll definitely let you know the path forward and dates when I know.

Serita

From: Wiebe, Joel
Sent: Wednesday, February 10, 2016 8:52 AM
To: Sanders, Serita <Serita.Sanders@nrc.gov>
Subject: Status of Bulletin 2012-01 - Design Vulnerability in Electric Power Systems

Can you tell me the status of the subject bulletin and the target Milestones for what is left to do?

Joel

From: Clark, Theresa
Sent: 14 Jul 2016 21:58:32 +0000
To: Clark, Theresa;Whitman, Jennifer;DSSCAL Resource;Mcginty, Tim;Holahan, Gary;West, Steven;Scarbrough, Thomas;Spencer, Michael
Subject: FW: Exelon backfit discussion

-----Original Appointment-----

From: Clark, Theresa
Sent: Thursday, July 14, 2016 5:08 PM
To: Clark, Theresa; Mcginty, Tim; DSSCAL Resource; Holahan, Gary; West, Steven; Scarbrough, Thomas; Spencer, Michael
Subject: Exelon backfit discussion
When: Monday, July 18, 2016 12:30 PM-1:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: HQ-OWFN-16B06-12p

Hi Tim,

Thanks for being willing to meet with the EDO's appeal panel for the Exelon backfit. As we discussed on the phone, you can bring staff if you would like to. However, you may not feel the need at this point—we are intending for this to be a casual conversation about the technical issues that led to the backfit and aren't sending any preparatory materials/questions. If we need further discussions (e.g., with particular staff) after this we can certainly do that.

Also—I know this isn't a great time (and Steve has a potential conflict) but getting another time in the next two weeks was nigh on impossible. Let me know if it is really bad timing for you. Thanks!

Background References:

- Appeal panel charter: [ML16173A311](#)
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- 5/3/16 NRR backfit appeal decision: [ML16095A204](#)
- 12/8/2015 Exelon backfit appeal to NRR: [ML15342A112](#)
- 10/9/2015 NRC backfit letter: [ML14225A871](#)
- 8/26/04 pressurizer safety valve setpoint safety evaluation: [ML042250531](#)
- 5/4/01 stretch power uprate safety evaluation: [ML033040016](#)

This document is publicly available in ADAMS as ML16246A150; all other documents are publicly available in ADAMS under their listed ML numbers.

From: [Alley, David](#)
To: [Billerbeck, John](#)
Cc: [Garmoe, Alex](#)
Subject: FW: Backfit Response Actions Tracking Sheet
Date: Tuesday, January 17, 2017 12:00:32 PM
Attachments: [Backfit Response Plan Implementation Tracker 1-17-17.docx](#)

John,
Please keep track of this

Dave

From: Garmoe, Alex
Sent: Tuesday, January 17, 2017 11:56 AM
To: Alley, David <David.Alley@nrc.gov>; Oesterle, Eric <Eric.Oesterle@nrc.gov>; Stuchell, Sheldon <Sheldon.Stuchell@nrc.gov>
Subject: Backfit Response Actions Tracking Sheet

Dave, Eric, and Sheldon,

Attached is a tracking sheet to keep folks informed of the status of the actions we laid out in response to the EDO's memo communicating the granting of Exelon's backfit appeal. Please let me know of additional updates or suggestions.

Thanks,



Alexander D. Garmoe
Senior Project Manager
Generic Communications Branch (PGCB)
Division of Policy and Rulemaking (DPR)
Office of Nuclear Reactor Regulation (NRR)
Alex.Garmoe@nrc.gov | 301-415-3814

Braidwood/Byron Backfit Response Implementation Plan Status Tracker

The below milestones and target dates reflect that which was included in the memo from Bill Dean to the EDO, issued on January 10, 2017 (ML16334A188). This was in response to the EDO's September 15, 2016 memo (ML16146A247) that communicated approval of the licensee's backfit appeal and requested a plan for addressing the issues in NSAL-93-013 and RIS 2005-29 (current issued version and proposed revision).

Implementation Plan Details	Target Date	Actions and Status	Assigned Staff
Define underlying technical issues in NSAL	Complete		
Identify relevant operating experience, assess the extent of condition across the fleet, and determine if the underlying technical issue has safety significance <ul style="list-style-type: none"> ○ Work with DIRS/IOEB to identify operating experience related to IOECCS occurrences and relevant data on PSV performance ○ DSS/SRXB to lead identification of the potentially affected plant designs and licensees, what NRC has previously accepted with respect to PSV qualification, and determination of whether PSV application appears appropriate for these licensees ○ Determine whether closure of GI-70 remains acceptable and/or impacts the staff position on the technical issue in NSAL-93-013 (from TGody Memo to NRR Backfit Panel (ML16081A405) ○ Document this outcome in a white paper from DSS/SRXB to DSS management 	3/31/2017	1/11: EOesterle email request to DIRS/IOEB for OpEx support 1/17: SRXB/IOEB/PGCB discussion on OpEx search. IOEB to do some searching and a f/u discussion will be in a couple weeks.	SRXB IOEB
Determine ASME code requirements for qualification and testing of water-qualified valves and applicable NRC requirements or	3/31/2017		

<p>positions regarding such qualification and testing. Determination to be informed by interaction with ASME code committee.</p> <ul style="list-style-type: none"> ○ Identify applicable ASME code language ○ Identify applicable NRC requirements and what specifically is required ○ Identify any gaps or lack of clarity in requirements 			
<p>Develop appropriate message to be communicated regarding the technical issue, regulatory requirements, and status of the fleet</p> <ul style="list-style-type: none"> ○ Is there a concern with PSV application and methods of qualification? ○ What is the extent of condition across the fleet? ○ Is long term operation of PSVs with water and steam technically feasible? ○ What has been previously accepted for PSV qualification by NRC? ○ What are currently acceptable methods of PSV qualification? ○ What are ASME OM code requirements for testing water-qualified valves? 	4/30/2017		
<p>Determine the appropriate process for disposition/communication of staff position. Consider whether any aspects of the issue should be included in the Generic Issues Program.</p> <ul style="list-style-type: none"> ○ Consider whether GI-70 should be re-assessed or updated (from TGody Memo to NRR Backfit Panel (ML16081A405)) 	5/19/2017		

<ul style="list-style-type: none"> ○ Ensure coordination and review by OGC and CRGR 			
<p>Implement the selected process in accordance with Agency guidance</p>	<p>TBD based on selected process</p>		
<p>Consider plant-specific actions to address concerns identified in extent of condition review</p>	<p>Following completion of communication of the staff's position</p>		

From: [Billerbeck, John](#)
To: [Alley, David](#)
Subject: FW: Braidwood/Byron - Appeal of Imposition of Backfit Regarding Compliance with 10 CFR 50.34(b), GDC 15, GDC 21, GDC 29, and Licensing Basis
Date: Wednesday, December 09, 2015 9:50:53 AM
Attachments: [RS-15-322.pdf](#) | The attachment is publicly available in ADAMS as ML15342A112

Dave,

I know you saw this already. It looks to me like the licensee doesn't dispute the technical argument that we made (i.e., that if you want to credit the PSVs with water relief, then you have to demonstrate in the ASME design and test programs that they will actually work with water). But rather, their dispute seems to focus on an alleged NRC procedural error (i.e., no backfit analysis performed / misuse of the compliance exemption). I guess we're in standby until management decides how to proceed.

John

From: Wiebe, Joel
Sent: Wednesday, December 09, 2015 7:27 AM
To: Poole, Justin; Beaulieu, David; Schwarz, Sherry; Wertz, Trent; Evans, Michele; Lubinski, John; McGinty, Tim; Jackson, Christopher; Whitman, Jennifer; Alley, David; Billerbeck, John; Kokajko, Lawrence; Mohseni, Aby; Stuchell, Sheldon; Jessie, Janelle; Krohn, Paul; Boland, Anne; Taylor, Robert; Wilson, George; Duncan, Eric; Benjamin, Jamie; Betancourt, Diana; McGhee, James; Draper, Jason
Subject: Braidwood/Byron - Appeal of Imposition of Backfit Regarding Compliance with 10 CFR 50.34(b), GDC 15, GDC 21, GDC 29, and Licensing Basis



430G Winfield Road
Warrenville, IL 60555
630.657.2000 Office

RS-15-322

10 CFR 50.109

December 8, 2015

Mr. William M. Dean
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

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

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. 50-454 and 50-455

Subject: Appeal of Imposition of Backfit Regarding Compliance with 10 CFR § 50.34(b), GDC 15, GDC 21, GDC 29, and Licensing Basis

Reference: Letter from Anne T. Boland (U.S. NRC) to Bryan Hanson, "Braidwood Station, Units 1 and 2, and Byron Station, Unit Nos. 1 and 2 – Backfit Imposition Regarding Compliance with 10 CFR § 50.34(b), GDC 15, GDC 21, GDC 29, and Licensing Basis (TAC NOS. MF3206, MF3207, MF3208, and MF3209)," dated October 9, 2015

In an October 9, 2015 letter and Safety Evaluation, the NRC concluded that the Braidwood and Byron stations are not in compliance with 10 CFR Part 50, Appendix A, General Design Criteria (GDC) 15, "Reactor Coolant System Design," GDC 21, "Protection System Reliability and Testability," and GDC 29, "Protection Against Anticipated Operational Occurrences." The NRC also found that Braidwood and Byron are not in compliance with 10 CFR § 50.34(b) and the plant-specific licensing basis regarding the prohibition of Condition II events propagating into Condition III events.

Specifically, based on the NRC's review of the Braidwood and Byron Updated Final Safety Analysis Report (UFSAR), Chapters 15.5.1, "Inadvertent Operation of Emergency Core Cooling System during Power Operation (IOECCS)," 15.5.2, "Chemical and Volume Control System (CVCS) Malfunction that Increases Reactor Coolant Inventory (CVCS) Malfunction," and 15.6.1, "Inadvertent Opening of a Pressurizer Safety or Relief Valve (IOPORV)," the NRC concluded that the UFSAR predicts water relief through a valve that is not qualified for water relief. The NRC determined that the UFSAR does not contain analyses that demonstrate the structures, systems, and components will meet the design criteria for Condition II faults as stated in the Braidwood and Byron UFSAR. The NRC therefore concluded that the UFSAR analyses do not demonstrate compliance with GDCs 15, 21, and 29.

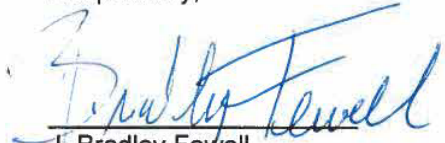
The NRC acknowledged that its position regarding Exelon Generation Company, LLC's (EGC) compliance with GDCs 15, 21, and 29, and 10 CFR § 50.34(b) is a change in NRC position

constituting a backfit under 10 CFR § 50.109(a)(1). However, the NRC concluded that the backfit analysis required by 10 CFR § 50.109(a)(2) is not necessary because the backfit is covered by the compliance exception in 10 CFR § 50.109(a)(4)(i).

EGC disagrees with the NRC's conclusion that the compliance exception applies in this case and is therefore appealing the NRC's backfitting determination in accordance with Management Directive 8.4, "Management of Facility-Specific Backfitting and Information Collection." As detailed in the Enclosure to this letter, the NRC has twice approved the inadvertent operation of the emergency core cooling system analysis underlying the Braidwood and Byron licensing bases. The NRC now appears to claim that because these prior approvals were erroneous, it may invoke the compliance exception in lieu of performing a backfit analysis. Although the compliance exception may be invoked in certain circumstances in which the backfit is necessary to bring a facility into compliance with its license or other NRC requirements, the compliance exception requires more than simply asserting that the prior staff approvals were wrong – the NRC must demonstrate that the prior approvals were erroneous because of an omission or mistake of fact at the time of the approval. The NRC has not made that case here. Therefore, the compliance exception is not applicable and the NRC must conduct a cost-justified, substantial safety backfit analysis.

If you have any questions, please contact David Gullott at (630) 657-2807.

Respectfully,



J. Bradley Fewell
Senior Vice President Regulatory Affairs
Exelon Generation Company, LLC

Encl.

cc: Executive Director for Operations
NRC Regional Administrator, Region III
Illinois Emergency Management Agency – Division of Nuclear Safety
NRC Senior Resident Inspector – Braidwood Station
NRC Senior Resident Inspector – Byron Station

Appeal of Backfit Determination Regarding Braidwood and Byron Compliance
with GDCs 15, 21, 29, and 10 CFR § 50.34(b)

Background

On October 9, 2015, the NRC staff imposed a compliance backfit on Exelon Generation Company, LLC (EGC) regarding compliance with 10 CFR Part 50, Appendix A, General Design Criteria (GDC) 15, "Reactor Coolant System Design," GDC 21, "Protection System Reliability and Testability," GDC 29, "Protection Against Anticipated Operational Occurrences," and 10 CFR § 50.34(b) for Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2.¹ The NRC concluded that, based on its review of the Braidwood and Byron Updated Final Safety Analysis Report (UFSAR), Chapters 15.5.1, "Inadvertent Operation of Emergency Core Cooling System during Power Operation (IOECCS)," 15.5.2, "Chemical and Volume Control System (CVCS) Malfunction that Increases Reactor Coolant Inventory (CVCS) Malfunction," and 15.6.1, "Inadvertent Opening of a Pressurizer Safety or Relief Valve (IOPORV)," the UFSAR predicts water relief through a valve that is not qualified for water relief. Therefore, the NRC concluded, the UFSAR does not contain analyses that demonstrate the structures, systems, and components will meet the design criteria for Condition II faults as noted in the Braidwood and Byron UFSAR, Chapter 15.0.1.2, which states:

Condition II - Faults of Moderate Frequency:

These faults, at worst, result in the reactor trip with the plant being capable of returning to operation. By definition, these faults (or events) do not propagate to cause a more serious fault, i.e., Condition III or IV events. In addition, Condition II events are not expected to result in fuel rod failures or reactor coolant system or secondary system overpressurization.

The NRC further concluded that because UFSAR Chapters 15.5.1, 15.5.2, and 15.6.1 do not demonstrate compliance with GDCs 15, 21, and 29, the UFSAR does not comply with 10 CFR § 50.34(b), which requires, in part, a UFSAR to include:

a description and analysis of the structures, systems, and components of the facility, with emphasis upon performance requirements, the bases, with technical justification therefor, upon which such requirements have been established, and the evaluations required to show that safety functions will be accomplished. The description shall be sufficient to permit understanding of the system designs and their relationship to safety evaluations.

In its technical evaluation, the NRC staff discussed three areas of non-compliance: (1) the IOECCS analysis contains a non-conservative assumption, fails to address return to operation, depends on water relief through pressurizer safety valves that lack appropriate water qualification documentation, and does not analyze the event to an appropriate end state; (2) EGC had not provided an analysis for the chemical and volume control system malfunction that increases reactor coolant inventory that demonstrates the plants' ability to meet the requirements of a Condition II event, and; (3) EGC had not provided an analysis for the IOPORV extending long enough into the transient to demonstrate that the event would not transition from a Condition II to a Condition III event.

¹ Letter from A. Boland (NRC) to Bryan Hanson, "Braidwood Station, Units 1 and 2, and Byron Station, Unit Nos. 1 and 2 – Backfit Imposition Regarding Compliance with 10 CFR § 50.34(b), GDC 15, GDC 21, GDC 29, and Licensing Basis (TAC NOS. MF3206, MF3207, MF3208, and MF3209)."

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The NRC recognizes that its current position on the acceptability of the IOECCS analysis that underlies the Braidwood and Byron licensing bases and its conclusion regarding compliance with the GDCs and regulatory requirements is a change in staff position. As described further below, the NRC on multiple previous occasions approved these analyses and concluded that Braidwood and Byron complied with all applicable GDCs and regulatory requirements.² The NRC now asserts that the prior acceptance "was based, among other things, on the use of water qualified [pressurizer safety valves] PSV's [sic] which upon further review, during the 2011 measurement uncertainty recapture uprate, was found to be unsubstantiated."³

The Legal Standard for the Compliance Exception to Backfit

The NRC defines a "backfit" as:

the modification of or addition to systems, structures, components, or design of a facility; or the design approval or manufacturing license for a facility; or the procedures or organization required to design, construct or operate a facility; any of which may result from a new or amended provision in the Commission's regulations or the imposition of a regulatory staff position interpreting the Commission's regulations that is either new or different from a previously applicable staff position...⁴

10 CFR § 50.109(a)(2) requires the NRC to prepare "a systematic and documented analysis...for backfits which it seeks to impose" unless a backfit exception applies. Under 10 CFR § 50.109(a)(3), the NRC may not impose a backfit unless that action would lead to a substantial increase in the overall protection of public health and safety or common defense and security, and even then, only if the backfit is cost-justified.

The compliance exception to the backfit rule, set forth in 10 CFR § 50.109(a)(4)(i), may be invoked when "necessary to bring a facility into compliance with a license or the rules or orders of the Commission, or into conformance with written commitments by the licensee." The Statement of Considerations for the backfit rule explains that the compliance exception:

² "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 119 to Facility Operating License No. NPF-37, Amendment No. 119 to Facility Operating License No. NPF-66, Amendment No. 113 to Facility Operating License No. NPF-72, Amendment No. 113 to Facility Operating License No. NPF-77, Exelon Generation Company, LLC, Byron Station, Unit Nos. 1 and 2, Braidwood Station, Unit Nos. 1 and 2, Docket Nos. STN 50-454, STN 50-455, STN 50-456, and STN 50-457," dated May 4, 2001 (2001 SE); "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 138 to Facility Operating License No. NPF-37, Amendment No. 138 to Facility Operating License No. NPF-66, Amendment No. 131 to Facility Operating License No. NPF-72, Amendment No. 131 to Facility Operating License No. NPF-77, Exelon Generation Company, LLC, Byron Station, Unit Nos. 1 and 2, Braidwood Station, Unit Nos. 1 and 2, Docket Nos. STN 50-454, STN 50-455, STN 50-456, and STN 50-457," dated Aug. 26, 2004 (2004 SE).

³ "Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Condition II Events that Could Generate More Serious Events at Braidwood Station, Units 1 and 2, and Byron Station, Units 1 and 2, Docket Nos.: STN 50-456 and STN 50-457 and STN 50-454 and STN 50-455," at 12 (2015 Backfit SE).

⁴ 10 CFR § 50.109(a)(1) (emphasis added).

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is intended to address situations in which the licensee has failed to meet known and established standards of the Commission because of omission or mistake of fact. It should be noted that new or modified interpretations of what constitutes compliance would not fall within the exception and would require a backfit analysis and application of the standard.⁵

Thus, the compliance exception may not be invoked simply when the NRC adopts a position regarding compliance with the license or NRC requirements that differs from its previous position. Rather, where the NRC has explicitly approved a licensee's method of compliance with a license or NRC requirement, the compliance exception may later be invoked to avoid performing a backfit analysis only when that prior approval was the result of an omission or mistake of fact based on information available at the time of the approval. In other words, the NRC cannot approve a licensee's compliance method based on one interpretation of the requirement and the licensee's method of compliance, and then later use the compliance exception to require compliance with a new and different interpretation without performing a backfit analysis.

The Compliance Exception Does Not Apply

The NRC has not justified invoking the compliance exception to the backfit rule. Although the staff recognizes that it is now taking a different position with respect to compliance with GDCs 15, 21, and 29, nowhere does it explain how its prior positions were erroneous due to an omission or mistake of fact.

Prior NRC Approvals

Multiple times, the NRC has approved the same IOECCS analysis that it now claims to be inadequate.

2001 Power Uprate

In 2001, the NRC approved a stretch power uprate for Braidwood and Byron. During its review of the uprate request, the NRC issued Requests for Additional Information (RAIs) to Commonwealth Edison Company⁶ (ComEd) regarding the IOECCS analysis to confirm that the pressurizer would not reach water solid conditions during an IOECCS event. The RAI stated:

The results of the analysis for an inadvertent operation of the emergency core cooling system (ECCS) during power operation indicate that the pressurizer will reach water solid during this event. The NRC staff has generally not accepted a solid pressurizer for this accident in order to avoid the potential for all three pressurizer safety valves to be stuck open (a SBLOCA) due to liquid relief through these safety valves. Please propose necessary plant modifications and

⁵ "Revision of Backfitting Process for Power Reactors," Final Rule, 50 Fed. Reg. 38,097, 38,103 (Sept. 20, 1985) (emphasis added).

⁶ Commonwealth Edison Company (ComEd) was the Braidwood and Byron licensee prior to a corporate restructuring and indirect license transfer approved by the NRC in January 2001.

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provide the results of your reanalysis of this event to confirm that the pressurizer will not reach water solid conditions during this event.⁷

ComEd responded as follows:

ComEd has compared the temperatures from the EPRI subcooled water relief testing against the lowest temperature expected during a spurious SI event at Byron and Braidwood Stations, and has concluded that some valve chatter may occur; however, the resultant valve degradation will be less than the damage seen in the EPRI test. Since the EPRI tested valves were capable of closing in response to system depressurization, we have concluded that Byron and Braidwood Station valves would also be capable of closing in response to system depressurization. After use to relieve subcooled water, the safety valves may have some seat leakage through the closed valves due to the valve degradation; however, the leakage from three PSRVs would be less than the flow through one fully open PSRV. Thus, the spurious SI transient may result in a limited version of an inadvertent opening of a pressurizer safety or relief valve transient, which is also a Condition II event.

In the evaluation of an "Inadvertent Opening of a Pressurizer Safety or Relief Valve", an accidental depressurization of the RCS is postulated, potentially resulting in a release of RCS inventory into containment through a PSRV and a failed pressurizer surge tank rupture disc. No fuel damage is assumed to occur as a result of this event. As such, the radiological releases (i.e., offsite doses) resulting from this breach of the rupture disc were found to be "substantially less than that of a LOCA," but no quantifiable value is given for this dose in UFSAR Section 15.6.1. Since the leaking PSRV in the spurious SI event occurs well after the reactor has tripped, the consequences of the event are bounded by the present analysis in UFSAR Section 15.6.1.

...

Since all Condition II acceptance criteria are met, modifications and additional analyses are unnecessary.⁸

The NRC issued a second RAI regarding the EPRI tests applicable to the spurious safety injection (SI) event.⁹ EGC responded with information regarding the EPRI tests, the temperature of water passed by the PSVs, and the length of time the PSVs are expected to pass water during an IOECCS event. In this response EGC again concluded that the spurious SI event would not progress to a Condition III event:

⁷ Letter from G.F. Dick (NRC) to O.D. Kingsley, "Byron and Braidwood – Request for Additional Information Regarding the Power Uprate Request," dated Oct. 19, 2000.

⁸ Letter from R. M. Krich (ComEd) to NRC, "Response to Request for Additional Information Regarding the License Amendment Request to Permit Uprated Power Operations at Byron and Braidwood Stations," dated Nov. 27, 2000.

⁹ Letter from G.F. Dick (NRC) to O.D. Kingsley, "Byron and Braidwood – Request for Additional Information Regarding the Power Uprate Request," dated Nov. 21, 2000.

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The lowest water temperature predicted for the expected duration (i.e., 20 minutes) of the Spurious SI transient at Byron Station and Braidwood Station is significantly higher (i.e., 590°F) than the lowest temperature (i.e., 530 °F) for the EPRI tests. Consequently, although stable valve operation cannot be assured, any valve damage would be expected to be less than the damage experienced during the EPRI testing. In any case, the safety valve will close upon system depressurization.

More importantly, it can be concluded that the Spurious SI event does not progress into a higher Condition transient (i.e., LOCA, Condition III). All three PSVs may lift in response to the event, but they will close and the resulting leakage from up to three PSVs is bounded by flow through one fully open PSV.¹⁰

Subsequently, the NRC approved the power uprate. In the accompanying Safety Evaluation, the NRC affirmed EGC's conclusions and stated that:

the EPRI tests adequately demonstrate the performance of the valves for the expected water temperature conditions and that there is reasonable assurance that the valves will adequately reseal following the spurious SI event....
Therefore, the staff finds the licensee's crediting of the PSVs to discharge liquid water during the spurious SI event to be acceptable.¹¹

Additionally, the NRC's approval of the 2001 power uprate included a review of the analyses supporting the CVCS Malfunction and IOPORV events. In the associated Safety Evaluation, the NRC concluded that these analyses are acceptable and both sites are adequately protected.

It is clear from the foregoing exchange and Safety Evaluation that the NRC staff specifically reviewed and approved the very analyses it now argues do not comply with GDCs 15, 21, and 29.

2004 PSV Setpoint Amendment

In 2003, EGC submitted a license amendment request for a PSV setpoint change. As part of its review, the NRC issued an RAI requesting that EGC perform a quantitative analysis regarding PSV water cycles and discharge water temperature:

The information discussed on pages 11 and 12 of Reference I for a qualitative evaluation indicated that the spurious SI event would have similar results from the LOAC with the RCP seal injection event in terms of the change in the number of PSV water cycles and PSV discharge water temperature. The information is not sufficient for the staff to determine the accuracy of the results of the qualitative evaluation. Perform a quantitative analysis using the approved

¹⁰ Letter from R. M. Krich (EGC) to the NRC, "Response to Request for Additional Information Regarding the License Amendment Request to Permit Upgraded Power Operations at Byron and Braidwood Stations," dated Jan. 31, 2001.

¹¹ 2001 SE at 12.

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methods and provide the results to show the accuracy of the qualitative evaluation results.¹²

EGC performed a confirmatory calculation and concluded that the spurious SI event would not progress to a Condition III event:

Based on this confirmatory calculation, it is concluded that the results of the spurious SI at power event, considering the proposed PSV lift setting and increased tolerance, are similar to the results of the existing spurious SI evaluation relative to pressurizer water temperature, number of PSV steam and water relief cycles, and pressurizer fill time. Therefore, the spurious SI transient does not progress into a higher condition transient (i.e., a Condition III loss of coolant accident) consistent with the conclusion of the existing evaluation.¹³

The NRC subsequently approved the PSV setpoint change and once again concurred with EGC's IOECCS analysis. The staff's Safety Evaluation specifically affirmed EGC's conclusion that a spurious SI event would not progress to a Condition III event: "Therefore, the staff concludes that the reanalysis is acceptable to assure that the PSVs will remain operable following a spurious SI event."¹⁴

The NRC's Current Position is Flawed

Although there have been no changes to the IOECCS technical evaluation since the licensing actions described above, the NRC now asserts that its prior acceptance of the IOECCS analysis was based "on the use of water qualified PSV's [sic] which upon further review... was found to be unsubstantiated." This statement is not explained in the staff's backfit discussion. An NRC staff non-concurring opinion (NCO) related to the 2013 measurement uncertainty recapture power uprate for Byron and Braidwood (the genesis for this backfit issue) appears to form the basis of the NRC's backfit analysis.¹⁵ The NCO states that the conclusion that PSVs are water qualified is "unsubstantiated by valve test results."¹⁶ However, the NCO provides no factual support for this assertion. The NCO also states that the NRC staff erred in approving the Current Licensing Basis analysis as part of the 2001 power uprate, but, again, does not explain the factual basis for its assertion of an underlying error. Current NRC staff cannot rely on an unspecified "error" made by prior NRC staff to demonstrate that an omission or mistake of fact underlying the prior NRC approvals renders those approvals unacceptable now. In any event, the NRC has not attempted to identify any "omission" or "mistake of fact."

¹² Email from M. Chawla (NRC) to J. Bauer, "Request for License Amendment to Revise the PSV Lift Settings – Byron/Braidwood Units 1 and 2," dated Oct. 2, 2003.

¹³ Letter from K. A. Ainger (EGC) to NRC, "Request for Additional Information Regarding a License Amendment Request to Revise the Pressurizer Safety Valves Lift Settings," dated Jan. 29, 2004.

¹⁴ 2004 SE at 5.

¹⁵ Memorandum from C. Jackson to S. Miranda, "Making Non-Concurrence NCP-2013-014 Public," dated Feb. 28, 2014, at Encl. 1.

¹⁶ *Id.*

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The NRC's backfit discussion asserts that its application and interpretation of the GDC, regulatory, and UFSAR requirements is consistent with prior applications and interpretations of compliance with those same requirements. The staff appears to assert that because its application and interpretation of the GDC, regulatory, and UFSAR requirements has not changed (but only its conclusion that Braidwood and Byron satisfy those requirements has changed), it satisfies the compliance exception to the backfit. The NRC cites Chapter 15 of the Standard Review Plan¹⁷, as well as Regulatory Guide 1.70¹⁸ as the basis for its position that it has "made no substantive changes to the position that Condition II events must be prohibited from transiting [sic] to Condition III events."¹⁹

While the NRC's interpretation regarding a Condition II event transitioning to a Condition III event has been consistent, the NRC's application of GDCs 15, 21, and 29 to support this backfit appears to differ from its previous documented positions. Here, the NRC concludes that the Braidwood and Byron UFSAR analyses do not demonstrate compliance with GDCs 15, 21, and 29. But the NRC has not articulated the basis for this conclusion, which is a departure from its previous positions. In Sections 3.1, 3.2, and 3.3 of the 2015 Backfit SE, the NRC discusses the IOECCS, CVCS Malfunction, and the IOPORV events, respectively. But other than a GDC 21 single failure discussion in Section 3.1, there is no other discussion on the three GDCs or their compliance and application to these three events.

Section 3.0 of the Backfit SE discusses the acceptance criteria for anticipated operational occurrences (AOOs) by referencing SRP Chapter 15.0, noting that pressure in the Reactor Coolant System (RCS) should be maintained below 110 percent of the design value in accordance with the ASME Boiler and Pressure Vessel Code. Specific to the three AOOs discussed in the Backfit SE, the SRP chapters cited by the staff state that compliance with GDC 15 requires that the RCS be designed with sufficient margin to assure that the design conditions of the RCS pressure boundary not be exceeded. The UFSAR analysis for each of these three AOOs does not result in pressures that reach 110 percent of RCS design pressure. Therefore, the NRC has not explained how the current UFSAR discussions of these AOOs do not comply with its stated positions on GDC 15.

Additionally, the specific SRP chapters for IOECCS, CVCS Malfunction, and IOPORV AOOs are silent on the applicability of GDCs 21 and 29, and do not discuss these GDCs as part of the Acceptance Criteria or Technical Rationale applied to the review of these AOOs. Thus, applying GDCs 21 and 29 to these AOOs, as the staff does in the Backfit SE, expands the GDCs' intent and changes the details of the accident analysis, which the Backfit SE fails to address. The GDCs themselves do not specifically set forth the details and approaches for analyzing these AOOs, and the applicable guidance does not reference these GDCs; therefore, the compliance exception to backfit does not apply.

The NRC's backfit discussion also references Regulatory Issue Summary 2005-29, "Anticipated Transients That Could Develop into More Serious Events," to support its position. The NCO states that the IOECCS analysis "has been unacceptable *since* [RIS 2005-029] was

¹⁷ NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" (SRP).

¹⁸ "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants, LWR Edition."

¹⁹ 2015 Backfit SE at 12.

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issued (2005)" (emphasis added). But by this logic, the 2001 and 2004 NRC approvals (issued before RIS 2005-029), were sound and only *after* RIS 2005-029 was issued did those prior NRC approvals become unacceptable. This reasoning highlights the NRC's flawed approach to imposing a backfit. If the IOECCS analysis became unacceptable after the 2005 RIS, then that same analysis was acceptable when previously approved by the NRC in 2001 and 2004. If the IOECCS analysis was acceptable in 2001 and 2004, then there is no omission or mistake of fact that led the NRC to erroneously approve that analysis on those two occasions. Without pointing to an omission or mistake of fact underlying a previous approval, the NRC has no basis for invoking the compliance exception.

In summary, the NRC has failed to justify imposition of a backfit under the compliance exception. To rely on this exception, the NRC must identify the omission or mistake of fact underlying its prior conclusions in 2001 and 2004 that the analyses of the IOECCS, CVCS Malfunction, and IOPORV events are acceptable. Without identifying and proving an omission or mistake of fact in the prior NRC approvals (rather than simply relying on an unspecified "error"), EGC may rely on those approvals to demonstrate compliance until the NRC staff completes a backfit analysis demonstrating that the backfit is a cost-justified, substantial safety enhancement. Otherwise, the NRC is simply changing its position regarding compliance, which is not covered by the compliance exception.

Conclusion

The NRC's Backfit SE does not justify imposition of a backfit. To invoke the compliance exception, the NRC must identify an omission or mistake of fact invalidating its prior approvals. Otherwise, the staff must perform a backfit analysis to determine whether the backfit is a cost-justified, substantial safety enhancement.²⁰ The NRC has done neither in this instance. For these reasons, EGC's appeal should be granted.

²⁰ The NRC staff must also prepare a regulatory analysis in accordance with Management Directive 8.4, which has not been done.

From: [Alley, David](#)
To: [Billerbeck, John](#)
Cc: [Garmoe, Alex](#); [Whitman, Jennifer](#)
Subject: FW: DPR-2368_Memo from WDean to VMcCree Documenting Plan to Review NSAL-93-013 Technical Issue_ML16334A188
Date: Wednesday, January 11, 2017 9:17:17 AM

John,
See below. My guess is that you will be playing a significant role in this process. Please make yourself available as needed.

Dave

From: Oesterle, Eric
Sent: Wednesday, January 11, 2017 9:06 AM
To: Garmoe, Alex <Alex.Garmoe@nrc.gov>; Alley, David <David.Alley@nrc.gov>
Subject: RE: DPR-2368_Memo from WDean to VMcCree Documenting Plan to Review NSAL-93-013 Technical Issue_ML16334A188

Alex,

Thanks, I had not seen that. I appreciate the heads up.

Eric

From: Garmoe, Alex
Sent: Wednesday, January 11, 2017 9:04 AM
To: Oesterle, Eric <Eric.Oesterle@nrc.gov>; Alley, David <David.Alley@nrc.gov>
Subject: FW: DPR-2368_Memo from WDean to VMcCree Documenting Plan to Review NSAL-93-013 Technical Issue_ML16334A188

Eric and Dave,

You might have already seen that the 120 day B/B backfit response to the EDO was issued yesterday and will soon be publicly available. What is the current status of staff efforts to work the milestones? The next milestone due date is March 31, 2017, by which we committed to having identified relevant operating experience, the fleet extent of condition, determination of possible safety significance, and determination of ASME code requirements for qualification and testing of water-qualified valves. If you could let me know which staff are working these items (for project tracking purposes) it would be greatly appreciated.

Thanks,
Alex

From: Adams, Carmelita
Sent: Tuesday, January 10, 2017 1:21 PM
To: RidsNrrPMBByron Resource <RidsNrrPMBByronResource.Resource@nrc.gov>; Thaggard, Mark <Mark.Thaggard@nrc.gov>; RidsNroMailCenter Resource <RidsNroMailCenter.Resource@nrc.gov>;

RidsNrrDpr Resource <RidsNrrDpr.Resource@nrc.gov>; RidsRgn3MailCenter Resource <RidsRgn3MailCenter.Resource@nrc.gov>; O'Brien, Kenneth <Kenneth.OBrien@nrc.gov>; RidsNrrDorlLpl3-2 Resource <RidsNrrDorlLpl3-2.Resource@nrc.gov>; Mizuno, Geary <Geary.Mizuno@nrc.gov>; RidsNrrDe Resource <RidsNrrDe.Resource@nrc.gov>; Scarbrough, Thomas <Thomas.Scarbrough@nrc.gov>; RidsRgn2MailCenter Resource <RidsRgn2MailCenter.Resource@nrc.gov>; Gody, Tony <Tony.Gody@nrc.gov>; Vegel, Anton <Anton.Vegel@nrc.gov>; Gendelman, Adam <Adam.Gendelman@nrc.gov>; RidsOgcMailCenter Resource <RidsOgcMailCenter.Resource@nrc.gov>; RidsNrrDss Resource <RidsNrrDss.Resource@nrc.gov>; Bailey, Marissa <Marissa.Bailey@nrc.gov>; RidsRgn1MailCenter Resource <RidsRgn1MailCenter.resource@nrc.gov>; Garmoe, Alex <Alex.Garmoe@nrc.gov>; Lorson, Raymond <Raymond.Lorson@nrc.gov>; RidsNrrMailCenter Resource <RidsNrrMailCenter.Resource@nrc.gov>; RidsNrrPMBraidwood Resource <RidsNrrPMBraidwoodResource.Resource@nrc.gov>; West, Khadijah <Khadijah.West@nrc.gov>; RidsNrrDorl Resource <RidsNrrDorl.Resource@nrc.gov>; Clark, Theresa <Theresa.Clark@nrc.gov>; RidsRgn4MailCenter Resource <RidsRgn4MailCenter.Resource@nrc.gov>

Subject: DPR-2368_Memo from WDean to VMcCree Documenting Plan to Review NSAL-93-013 Technical Issue_ML16334A188

Good afternoon all,

Please follow the link below for the electronic distribution of :

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[Open ADAMS P8 Document \(Response to Request for a Plan to Assess the Treatment of the Underlying Technical Issue in Nuclear Safety Advisory Letter-93-013 and the Positions in Regulatory Information Summary 2005-29 and Proposed Revision 1.\)](#)

Thanks,

Carmelita Adams

Administrative Assistant
U.S. Nuclear Regulatory Commission
Office: NRR/DPR
Location: OWFN-12D19
Mail Stop: OWFN-12D20
Phone: 301-415-8501
Email: Carmelita.Adams@nrc.gov



From: [Whitman, Jennifer](#)
To: [Alley, David](#); [Billerbeck, John](#); [Wolfgang, Robert](#); [Farnan, Michael](#)
Subject: FW: Enforcement Petition (10 CFR §2.206) Regarding Exelon's Byron and Braidwood Stations
Date: Wednesday, November 16, 2016 10:38:42 AM
Attachments: [P-2206.docx](#)

The petition is publicly available in ADAMS as ML17010A051
--

FYI, I assume this will be coming our way through the process soon.

From: Samuel Miranda [mailto:sm0973@gmail.com]
Sent: Tuesday, November 15, 2016 5:14 PM
To: McCree, Victor <Victor.McCree@nrc.gov>
Cc: Vietti-Cook, Annette <Annette.Vietti-Cook@nrc.gov>; Dean, Bill <Bill.Dean@nrc.gov>; Veil, Andrea <andrea.veil@nrc.gov>; Burns, Stephen <Stephen.Burns@nrc.gov>; CMRSVINICKI Resource <CMRSVINICKI.Resource@nrc.gov>; CMRBARAN Resource <CMRBARAN.Resource@nrc.gov>
Subject: [External_Sender] Enforcement Petition (10 CFR §2.206) Regarding Exelon's Byron and Braidwood Stations

Mr. McCree:

Samuel Miranda (the Petitioner) hereby submits this Petition, pursuant to the terms of 10 CFR §2.206, regarding the licensing and operation of the Byron and Braidwood Stations. Specifically, the Licensee (Commonwealth Edison; which was succeeded by Exelon) has obtained the NRC's authorization to operate its Byron and Braidwood Stations at uprated power levels, based upon evaluations of certain anticipated operational occurrences (AOOs) that are rife with errors, and omissions. More importantly, the Licensee employed a circular logic that failed to demonstrate that the Byron and Braidwood plant design meets all of its design requirements.

The Petitioner requests the NRC to take the following actions:

- (1) Revoke the Licensee's authorizations to operate its Byron and Braidwood Stations at any uprated power level.
- (2) Impose a license condition, on current operations, requiring the Licensee to provide an acceptable demonstration of compliance with the aforementioned design requirement.
- (3) Require the Licensee to file a 10 CFR §21 report regarding its statement of *no significant hazards*.

Please read the attachment for the particulars.

With respect and concern,

Samuel Miranda, PE
2212 Forest Glen Road
Silver Spring, MD 20910

sm0973@gmail.com

(301) 585-3289

From: [Farnan, Michael](#)
To: [Billerbeck, John](#); [Wolfgang, Robert](#)
Subject: FW: Enforcement Petition (10 CFR §2.206) Regarding Exelon's Byron and Braidwood Stations
Date: Wednesday, November 16, 2016 11:17:58 AM

CAC # for Byron/Braidwood discussions = MF3949

Michael F. Farnan
Mechanical Engineer
U.S. Nuclear Regulatory Commission
301-415-1486

From: Garmoe, Alex
Sent: Wednesday, November 16, 2016 11:16 AM
To: Whitman, Jennifer <Jennifer.Whitman@nrc.gov>; Farnan, Michael <Michael.Farnan@nrc.gov>
Subject: RE: Enforcement Petition (10 CFR §2.206) Regarding Exelon's Byron and Braidwood Stations

MF3949

From: Whitman, Jennifer
Sent: Wednesday, November 16, 2016 11:16 AM
To: Farnan, Michael <Michael.Farnan@nrc.gov>
Cc: Garmoe, Alex <Alex.Garmoe@nrc.gov>
Subject: RE: Enforcement Petition (10 CFR §2.206) Regarding Exelon's Byron and Braidwood Stations

I don't know because I can't log into HRMS, but you can search for it in HRMS using the advanced search, changing the dropdown to contains, then "2005-29"

From: Farnan, Michael
Sent: Wednesday, November 16, 2016 11:13 AM
To: Whitman, Jennifer <Jennifer.Whitman@nrc.gov>
Subject: RE: Enforcement Petition (10 CFR §2.206) Regarding Exelon's Byron and Braidwood Stations

And that CAC # is.....?

Michael F. Farnan
Mechanical Engineer
U.S. Nuclear Regulatory Commission
301-415-1486

From: Whitman, Jennifer
Sent: Wednesday, November 16, 2016 11:12 AM
To: Farnan, Michael <Michael.Farnan@nrc.gov>
Cc: Garmoe, Alex <Alex.Garmoe@nrc.gov>
Subject: RE: Enforcement Petition (10 CFR §2.206) Regarding Exelon's Byron and Braidwood Stations

Alex said he was using the RIS 2005-29 Rev 1 TAC, so that is what I have been using as well.

From: Farnan, Michael
Sent: Wednesday, November 16, 2016 10:40 AM
To: Whitman, Jennifer <Jennifer.Whitman@nrc.gov>
Subject: RE: Enforcement Petition (10 CFR §2.206) Regarding Exelon's Byron and Braidwood Stations

Thanks Jen. By the way, is there a specific CAC # we should be using to support this effort?

Michael F. Farnan
Mechanical Engineer
U.S. Nuclear Regulatory Commission
301-415-1486

From: Whitman, Jennifer
Sent: Wednesday, November 16, 2016 10:39 AM
To: Alley, David <David.Alley@nrc.gov>; Billerbeck, John <John.Billerbeck@nrc.gov>; Wolfgang, Robert <Robert.Wolfgang@nrc.gov>; Farnan, Michael <Michael.Farnan@nrc.gov>
Subject: FW: Enforcement Petition (10 CFR §2.206) Regarding Exelon's Byron and Braidwood Stations

FYI, I assume this will be coming our way through the process soon.

From: Samuel Miranda [<mailto:sm0973@gmail.com>]
Sent: Tuesday, November 15, 2016 5:14 PM
To: McCree, Victor <Victor.McCree@nrc.gov>
Cc: Vietti-Cook, Annette <Annette.Vietti-Cook@nrc.gov>; Dean, Bill <Bill.Dean@nrc.gov>; Veil, Andrea <andrea.veil@nrc.gov>; Burns, Stephen <Stephen.Burns@nrc.gov>; CMRSVINICKI Resource <CMRSVINICKI.Resource@nrc.gov>; CMRBARAN Resource <CMRBARAN.Resource@nrc.gov>
Subject: [External_Sender] Enforcement Petition (10 CFR §2.206) Regarding Exelon's Byron and Braidwood Stations

Mr. McCree:

Samuel Miranda (the Petitioner) hereby submits this Petition, pursuant to the terms of 10 CFR §2.206, regarding the licensing and operation of the Byron and Braidwood Stations. Specifically, the Licensee (Commonwealth Edison; which was succeeded by Exelon) has obtained the NRC's authorization to operate its Byron and Braidwood Stations at uprated power levels, based upon evaluations of certain anticipated operational occurrences (AOOs) that are rife with errors, and omissions. More importantly, the Licensee employed a circular logic that failed to demonstrate that the Byron and Braidwood plant design meets all of its design requirements.

The Petitioner requests the NRC to take the following actions:

- (1) Revoke the Licensee's authorizations to operate its Byron and Braidwood Stations at any uprated power level.
- (2) Impose a license condition, on current operations, requiring the Licensee to provide an acceptable demonstration of compliance with the aforementioned design requirement.
- (3) Require the Licensee to file a 10 CFR §21 report regarding its statement of *no significant hazards*.

Please read the attachment for the particulars.

With respect and concern,

Samuel Miranda, PE

(b)(6)

sm0973@gmail.com

(b)(6)

From: [Whitman, Jennifer](#)
To: [McGinty, Tim](#); [Taylor, Robert](#); [Qesterle, Eric](#)
Cc: [Keene, Todd](#); [Farnan, Michael](#); [Alley, David](#); [Billerbeck, John](#); [Wolfgang, Robert](#)
Subject: FW: FOIA/PA-2017-00082 Exelon Backfit Appeals
Date: Friday, October 21, 2016 2:53:09 PM
Attachments: [2017-0082-r.pdf](#)
Importance: High

FYI, Sam Miranda has submitted a FOIA Request for records relating to the Exelon Appeals.

From: Kauffman, Lisa
Sent: Friday, October 21, 2016 2:00 PM
To: Orf, Tracy <Tracy.Orf@nrc.gov>; Davidson, Evan <Evan.Davidson@nrc.gov>; Ruffin, Steve <Steve.Ruffin@nrc.gov>; Anderson, Shaun <Shaun.Anderson@nrc.gov>; Mahoney, Michael <Michael.Mahoney@nrc.gov>; Schmitt, Ronald <Ronald.Schmitt@nrc.gov>; Wertz, Trent <Trent.Wertz@nrc.gov>
Cc: Whitman, Jennifer <Jennifer.Whitman@nrc.gov>
Subject: FW: FOIA/PA-2017-00082 Action Item/Instructions Non-Excepted Requester Fee Estimate Required
Importance: High

Good Afternoon,

Per guidance from Trent, I am tasking each of your divisions with the attached FOIA 2017-0082. Please see the attached FOIA Fee Estimate Request and respond to me directly with your estimates for (1) search time, and (2) page count by **October 26th**.

If there are no records or you feel a different NRR division/NRC office should be assigned, please let me know as soon as possible; otherwise, you can respond to me directly with your estimates. There is no need to commence your search until you hear back from me. Please do not copy to OCIO FOIA Specialist on your response.

Thank you for your help, and please contact me if you have any questions.

Thanks,

Lisa Kauffman, FOIA Coordinator
NRR/PMDA/ITIB
301-415-8199
FOIA CAC: ZF0000

From: Ennis, Tina [<mailto:foia.resource@nrc.gov>]
Sent: Friday, October 21, 2016 1:15 PM
To: RidsEdoFoia Resource <RidsEdoFoia.Resource@nrc.gov>; NRO_FOIA Resource <NRO_FOIA.Resource@nrc.gov>; RidsNrrMailCenter Resource <RidsNrrMailCenter.Resource@nrc.gov>; FOIAPANSIR Resource <FOIAPANSIR.Resource@nrc.gov>;

FOIAPARES Resource <FOIAPARES.Resource@nrc.gov>

Cc: Correa, Yessie <Yessie.Correa@nrc.gov>; Kauffman, Lisa <Lisa.Kauffman@nrc.gov>; Warner, Deanna <Deanna.Warner@nrc.gov>; Kardaras, Tom <Tom.Kardaras@nrc.gov>; FOIA Resource <FOIA.Resource@nrc.gov>

Subject: FOIA/PA-2017-00082 Action Item/Instructions Non-Excepted Requester Fee Estimate Required

Offices Assigned Action on October 21, 2016:
EDO;NRO;NRR;NSIR;RES

This requester has been placed in the "**non-excepted**" fee category, being responsible only for search fees in excess of two (2) hours and duplication costs after receiving 100 pages free of charge. Therefore, your initial fee estimate of **search fees** and **duplication costs** is required on or before **October 26, 2016**, which is four (4) working days from the date of this e-mail.

The Government Information Specialist for this request is **Tina Ennis**, who can be reached at **301-415-5616** or Tina.Ennis@nrc.gov.

If there are no responsive records, please respond with "No Records". If you believe any other office, not copied on this e-mail, may have records responsive to this request, please let the assigned specialist know.

The FOIA request should be processed in accordance with the standard instructions (How to Respond to a FOIA Request) at **ML16123A164**. To ensure that **search time** is calculated appropriately and consistently, **search** is the time spent by any staff member looking for material subject to a request, either manually or by automated means, including time spent in page-by-page or line-by-line identification of responsive material within records. Searches should identify all paper and electronic records maintained by your office, including records in any file centers or other remote locations, all versions in ADAMS, Sharepoint, or other shared drives, as well as individual staff members' Outlook, Office, and other computer files, audio and video tapes, and any other media.

You are encouraged to ask for a scoping discussion with the requester when you believe it will be beneficial.

You are encouraged to ask for assistance in performing adequate ADAMS searches if you have any difficulty doing a search.

NRC Form 496, "Report of Staff Resources for Processing FOIA/PA Requests" is available in the NRC Forms Library for your use.

When you respond, please make sure that you are sending your response to FOIA.Resource@nrc.gov, as well as the assigned specialist.

Thank you.

CASE NO: 2017-0082
DATE REC'D: 10/20/2016
SPECIALIST:
RELATED CASE:

From: [Samuel Miranda](#)
To: [FOIA Resource](#)
Subject: [External_Sender] Freedom of Information Act Request Letter
Date: Thursday, October 20, 2016 9:39:16 AM

Freedom of Information Act Request Letter

Via E-Mail and Certified Mail

October 18, 2016

U.S. Nuclear Regulatory Commission
Ms. Tina Ennis, FOIA/Privacy Officer
Mailstop: T-5 F09
Washington, DC 20555-0001

FOIA.resource@nrc.gov

Dear Ms. Ennis:

Pursuant to the Freedom of Information Act (5 U.S.C. § 552), Samuel Miranda requests that the U.S. Nuclear Regulatory Commission (NRC) produce all correspondence, memoranda, documents, reports, records, statements, audits, lists of names, applications, letters, expense logs and receipts, calendar or diary logs (especially with respect to "drop-in" visits), facsimile logs, telephone records, call sheets, notes, examinations, presentations and slides, opinions, folders, files, books, manuals, pamphlets, forms, drawings, charts, photographs, electronic mail, and other documents and things that refer or relate to the following in any way, within twenty (20) business days: Exelon's appeals, dated December 8, 2015 (ADAMS Accession No. ML15342A112), and June 22, 2016 (ADAMS Accession No. ML16154A254), of the NRC staff's backfit order of October 9, 2015 (ADAMS Accession No. ML14225A871) that was directed to the Braidwood Station, Units 1 and 2, Facility Operating License Nos. NPF-72 and NPF-77, located in Will County, Illinois, and the Byron Station, Unit Nos. 1 and 2, Facility Operating License Nos. NPF-37 and NPF-66, located in Ogle County, Illinois. (These plants are also known by their docket numbers: STN 50-454 through STN 50-457.) The NRC is requested to produce all the specified information for the period from October 9, 2015 to the date of this request.

This information is requested, especially; but not exclusively, from the records of the following persons:

Victor M. McCree
Clark

Gary M. Holahan

Theresa V.

Thomas G. Scarbrough
West

Michael A. Spencer

K. Steven

Selim Sancaktar

Don Helton

James Chang

John Lane
Dean

Michael Johnson

William H.

If any responsive record or portion thereof is claimed to be exempt from production under FOIA, sufficient identifying information (with respect to each allegedly exempt record or portion thereof) must be provided to allow the assessment of the propriety of the claimed exemption. *Vaugh v. Rosen*,

484 F.2d 820 (D.C. Cir 1973), cert denied, 415 U.S. 977 (1974). Additionally, any reasonably segregable portion of a responsive record must be provided to me after redaction of any all allegedly exempt material, as the law requires.

In order to help you to determine my status for purposes of determining the applicability of any fees, you should know that I am an individual seeking information for personal use and not for a commercial use. Furthermore, I am a retired nuclear engineer, with a PE license in mechanical engineering, and more than 40 years of professional experience in nuclear safety analysis and licensing, 25 years of which were in Westinghouse's Nuclear Safety Department, and almost 15 years of which were in the NRC's Office of Nuclear Reactor Regulation, as a Reactor Systems Engineer. A significant part of my experience has been in the design and analysis of the very equipment that is the subject of the NRC staff's backfit. Before I retired, in 2014, I began the backfit process that culminated in the backfit order of October 9, 2015 (ADAMS Accession No. ML14225A871). I intend to use the requested information to advocate for a public review of the aforementioned backfit, and especially the substance of Exelon's appeals, at the NRC, at the Advisory Commission on Reactor Safeguards (ACRS), by public interest groups, and in the media.

I expect that most or all of the requested information will be provided in electronic form. Items that are publicly accessible in ADAMS can be supplied simply by noting

the documents' titles, authors, dates of issue, and identifying their correspondent ADAMS accession numbers.

I request a waiver of all fees for this request under the terms of 5 U.S.C. Section 552(a)(4)(A)(iii). Disclosure of the requested information to me is in the public interest because it is likely to contribute significantly to public understanding of the NRC's responsibilities and its performance as the nation's regulator of commercial nuclear plants, and is not primarily in my commercial interest. I believe I meet the criteria for a fee waiver recognized by the U.S. Justice Department - in its policy guidance of April 1987 - and by the federal courts, See *Project on Military Procurement v. Department of the Navy*, 710 F. Supp. 362 363, 365 (D.C.D. 1989).

Please take note of the Office of Management and Budget guidelines published March 27, 1987 (52 FR 10012) that include electronic publications and other nontraditional publishers as representatives of the news media. My most recent publication, on this issue, is a peer-reviewed paper in a technical journal. See ICONE24-60472, "Strategies to Prevent Benign Transients from Becoming Serious Accidents", Samuel Miranda, Proceedings of the 2016 24th International Conference on Nuclear Engineering, ICONE24, June 26-30, 2016, Charlotte, North Carolina.

In your deliberations, please take note of the following cases: *Campbell v. U.S. Department of Justice*, 334 U.S. App. D.C. (1998) (administrative and seemingly repetitious information is not exempt from fee-waiver consideration); *Project on Military Procurement* (agencies cannot reject a fee waiver based on the assumption that the information sought is covered by a FOIA exemption; and *Landmark Legal Foundation v. Internal Revenue Service*, 1998 U.S. Dist. LEXIS 21722 (D.C.D. 1998) (the fact that the information will soon be turned over to a public body does not exempt the material from fee-waiver consideration).

I am willing to pay fees up to the amount of \$10. If the fees will exceed this amount, please inform me before fees are incurred. I can be contacted at (b) (6) if necessary to discuss any aspect of this request. I look forward to receiving the requested documents and a full fee waiver within twenty (20) business days.

Thank you for your consideration of this request.

Sincerely,

Samuel Miranda, PE

(b) (6)

(a copy of my passport page has been sent, by certified US mail, to verify my identity)

From: [Oesterle, Eric](#)
To: [Alley, David](#); [Stuchell, Sheldon](#); [Keene, Todd](#); [Farnan, Michael](#); [Wolfgang, Robert](#)
Subject: Fw: heads up - NEI letter on operability determinations
Date: Friday, October 07, 2016 11:15:11 AM
Attachments: [image001.png](#)

Forwarding the email trail to you regarding the desire for a Division level discussion on the path forward for developing a 120-day plan in response to EDO tasking to NRR that was part of the EDO decision on the Byron/Braidwood backfit appeal.

Eric

From: Taylor, Robert
Sent: Tuesday, October 4, 2016 10:29 AM
To: Oesterle, Eric
Subject: FW: heads up - NEI letter on operability determinations

Expectation is for a meeting next week at the division level. ☺

From: Lubinski, John
Sent: Tuesday, October 04, 2016 8:46 AM
To: Taylor, Robert <Robert.Taylor@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>
Cc: Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>
Subject: RE: heads up - NEI letter on operability determinations

As we discussed this morning with Brian, let's have a division level meeting next week and decide how has the overall lead.

From: Taylor, Robert
Sent: Tuesday, October 04, 2016 7:52 AM
To: Lubinski, John <John.Lubinski@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>
Cc: Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>
Subject: RE: heads up - NEI letter on operability determinations

Nope. Haven't had an initial meeting yet. Eric and Dave Alley have a meeting set up with their staff to discuss this week. I suspect we will have a division-level meeting next week. Todd Keene has gotten involved because the path forward could affect the draft RIS under development. Todd would make a great PM for the 120-day plan as well given his knowledge of the issue. We may just have to ask DPR for the support officially.

From: Lubinski, John
Sent: Tuesday, October 04, 2016 7:35 AM
To: McGinty, Tim <Tim.McGinty@nrc.gov>
Cc: Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; Taylor, Robert <Robert.Taylor@nrc.gov>
Subject: RE: heads up - NEI letter on operability determinations

Have we had our initial coordination meeting on the EDO 120 day action (sorry, do not know since I was out)? If not, let's have one make initial assignments. I would like to do early since there is an ASME code meeting in Nov and it would be good to discuss this at the code.

Is Todd Keene going to be our PM on this? During our discussion about DI&C he asked me about this and I forwarded him Rob's e-mail that Eric O was taking the coordination lead.

Thanks

From: McGinty, Tim

Sent: Monday, October 03, 2016 7:24 PM

To: Lubinski, John <John.Lubinski@nrc.gov>

Cc: Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; Taylor, Robert <Robert.Taylor@nrc.gov>

Subject: RE: heads up - NEI letter on operability determinations

So, since DSS has been kind enough to take the lead on developing the response for the baffle bolt NEI letter (operability determinations, as a process, being owned by DSS within NRR), I am sure that you agree that DE now owns the two issues which the OEDO wants a plan for addressing as discussed in the attached OEDO letter:

- 1) "...the need to assess the treatment of the underlying technical issue described in the 1993 NSAL after water-discharge at PWRs" and "...the safety significance of the potential for PSV's to stick open should be considered as part of a generic resolution of this issue for all PWRs", and
- 2) given the EDO's decision, the positions included in RIS 2005-29 (that ASME BPV water qualification documentation is required if a PSV is assumed to reclose after passing water (was not a known and established standard); and, that water discharge through a steam qualified PSV will cause the valve to stick in its fully open position), as well as the proposed Revision 1 (that PSVs are subject to single failure criterion was also not a known and established standard, and still is not since it first appeared in the draft Rev 1 for the RIS), should be re-assessed through the appropriate generic process to ensure they receive appropriate backfit consideration.

Of course we are and will be active partners with DE (we've already directed SRXB to take the DSS lead in coordinating with DE) in the relationship with reactor systems and accident analysis, however, the technical issues that the OEDO has directed NRR to address are clearly owned by DE, right?

Tim

From: Taylor, Robert
Sent: Friday, September 30, 2016 2:47 PM
To: Lubinski, John <John.Lubinski@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>
Cc: Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; Miller, Chris <Chris.Miller@nrc.gov>; King, Michael <Michael.King2@nrc.gov>
Subject: Re: heads up - NEI letter on operability determinations

John,

Thanks. Looks to be a multifaceted letter. Probably going to require a collaborative effort to prepare a response. Does Region I need to be involved?

Rob

On: 30 September 2016 10:15, "Lubinski, John" <John.Lubinski@nrc.gov> wrote:
FYI - I believe you still own Operability Determinations.

From: Clark, Theresa
Sent: Friday, September 30, 2016 8:59 AM
To: Miller, Chris <Chris.Miller@nrc.gov>; King, Michael <Michael.King2@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>; Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>
Cc: Bowen, Jeremy <Jeremy.Bowen@nrc.gov>; Wertz, Trent <Trent.Wertz@nrc.gov>; Dean, Bill <Bill.Dean@nrc.gov>; Evans, Michele <Michele.Evans@nrc.gov>; McDermott, Brian <Brian.McDermott@nrc.gov>
Subject: heads up - NEI letter on operability determinations

Good morning! You may have already seen this via the cc: to Bill; we are working on getting it into public ADAMS. Mike J. has asked us to respond, so we are going to be tasking NRR through STAR (starting with a 10/20 due date so we can try to respond within a month, but that's internally controlled and negotiable). Jeremy will also send to the regions for awareness as you may be reaching to them on the response.

From: PIETRANGELO, Tony [<mailto:arp@nei.org>]
Sent: Thursday, September 29, 2016 5:13 PM
Subject: [External_Sender] NRC Non-Cited Violations Related to Susceptibility to Baffle Bolt Degradation

September 29, 2016

Mr. Michael R. Johnson
Deputy Executive Director for Reactor and Preparedness Programs
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission

Washington, DC 20555-0001

Subject: NRC Non-Cited Violations Related to Susceptibility to Baffle Bolt Degradation

Project Number: 689

References:

1. NRC letter from Glenn T. Dentel, NRC Region I, to Anthony Vitale, Entergy, Indian Point Nuclear Generating – Integrated Inspection Report, dated August 30, 2016.
2. NRC letter from Fred L. Bower, NRC Region I, to Peter Sena, III, PSEG Nuclear LLC, Salem Generating Station – Integrated Inspection Report, dated September 22, 2016.
3. NRC Draft Regulatory Issue Summary YYYY-####, Disposition of Information Related to the Time Period Safety-Related Structures, Systems or Components are Installed, dated May 10, 2016.

Dear Mr. Johnson:

The industry has often been reluctant to challenge small shifts in regulatory positions that are initiated through individual findings during the inspection and enforcement process. These shifts in position often go unchallenged due to their relatively low impact, but over time, due to the generic application and implications of those positions, they become collectively burdensome to the industry with no safety benefit. It is in the spirit of raising awareness of those types of issues, in a more real time fashion, that this letter is being respectfully submitted.

The industry intends to clarify the conditions/criteria that would lead to entry into the operability determination process as part of the industry effort to develop a standard process guideline. The need for this clarification is illustrated by the two non-cited violations (NCVs) associated with the baffle former plate bolt (BFB) issue documented in inspection reports issued to Indian Point 3 and Salem 2 (References 1 and 2). This need is also illustrated in a recent U.S. Nuclear Regulatory Commission (NRC) draft generic communication (Reference 3) which proposes to introduce the term “credible information” when referring to external operating experience (OE). The examples proposed in the attachment to Reference 3 imply that receipt of such “credible information” is cause for invoking the operability determination process. For the reasons discussed in this letter, the industry strongly disagrees.

The Nuclear Energy Institute, Inc. (NEI) has reviewed the two NCVs in References 1 and 2, and after consideration of the issues involved, has concluded that the position taken by the NRC regarding the applicability of the operability determination process is contrary to the original intent of the process and has generic implications for the industry that are unnecessarily burdensome, overly subjective and will not enhance nuclear safety in similar issues encountered at nuclear sites.

The referenced NCVs state that Entergy and PSEG violated NRC requirements by not documenting the final disposition of the impact of the OE gleaned from inspections of BFB at Indian Point 2 and Salem 1 using their operability determination procedures. The industry believes these NCVs

represent an unwarranted and inappropriate expansion in the use of the operability determination process to disposition incoming OE. This will unnecessarily burden shift operations and plant technical staff. It also has the potential to cause confusion, as it did in these cases, around which is the appropriate process to use to assess the safety impact of external OE.

The OE extent-of-condition element of the industry's corrective action programs is more appropriately suited to assess the impact of information obtained from another unit, particularly when the existence and/or extent of the degraded condition is speculative. The "susceptibility to known degradation," as mentioned in Reference 2, does not equate to known degradation and should not be an entry criterion requiring disposition of an issue via an operability determination. The industry's corrective action programs per 10 CFR 50, Appendix B, Quality Assurance, adequately fulfills this role. The regulatory oversight under 10 CFR 50, Appendix B, is sufficient to address the potential safety concerns related to applicable OE via the corrective action program. This method of addressing OE prioritizes and safely addresses issues without overly burdening shift operations on potential issues, and has been and continues to be effective at maintaining safety.

For these reasons, as elaborated further below, we believe our ongoing interactions to improve the clarity of guidance on the application of the operability determination process is a better means to address this generic concern rather than through plant-specific inspection and enforcement actions.

The nuclear safety implications of continued operation in view of the susceptibility to BFB degradation were adequately dispositioned by technical evaluations of the extent-of-condition (EOC) performed under the licensees' corrective action/OE programs:

The susceptibility of BFB to degradation due to irradiated assisted stress corrosion cracking (IASCC) is a condition that has been known by the industry and NRC for several years. It has been the subject of significant technical analysis and evaluation, and has led to recommendations by the Pressurized Water Reactor Owners Group (PWROG) and the EPRI Materials Reliability Program (MRP) to implement enhanced in-service inspection protocols at potentially affected plants. All along, the susceptibility of BFB to degradation has been addressed by licensees using their corrective action programs.

The operability determination process is neither the appropriate nor the most effective process for evaluating the safety of continued operation in light of this issue:

The operability determination process was designed to address known and quantifiable nonconforming or degraded conditions actually affecting an installed system, structure or component (SSC), where that SSC is required to be operable for technical specification compliance.

In Reference 2, the NRC infers that since there was a "susceptibility to a known degradation mechanism," an operability determination was warranted and required. The industry does not

agree. Susceptibility to a known degradation mechanism does not equal known degradation. Entry into the operability determination process requires some degree of knowledge of an actual degraded or nonconforming condition that lends itself to characterization by inspection, test or engineering analysis. In the case of the BFB degradation for Westinghouse four-loop “down flow” plants, there was an improving knowledge of the factors that would inform plant operators of the probability that the condition existed, but little information that would inform them on the extent of the condition (numbers, patterns and severity of corrosion) at the operating units that had not conducted recent inspections. In such cases, as discussed previously, an extent-of-condition evaluation under the corrective action process is more appropriate and allows the licensee to explore a wider range of possibilities and safety impacts than would be explored in an operability determination.

The industry agrees that there are circumstances when OE information received from sources external to an operating reactor needs to be dispositioned via an operability determination. For example, a 10 CFR 21 report received from a supplier that identifies a known defect in a component that is known to be installed in a licensee’s plant needs to be evaluated for operability if that component is installed in a TS system.

In summary, the use of the operability determination process to disposition prospective problems or problems not associated with a defined condition is an inappropriate use of the process and an ineffective use of licensee resources.

The NRC position stated in References 1 and 2 represents an expansion of the application of operability determination process and will have deleterious unintended consequences:

The susceptibility of BFB to IASCC was known well before the recent inspection results from Indian Point 2 and Salem 1 had been assessed as OE and factored into existing technical evaluations and ISI programs supporting operational safety decisions at Westinghouse plants. The referenced NCVs would imply there is a threshold at which the process for this ongoing assessment of information obtained from other sources would shift from the technical evaluations performed under a licensee’s corrective action/OE program to an operability determination. The industry is not aware of such a threshold in either the NRC’s regulatory framework or in the affected licensee’s plant procedures. The industry acknowledges that evaluation of operability is a continuous process. If at any time information is developed that leads to a conclusion that the presumption of operability is lost, then the conditions of the operating license must be satisfied.

Taken to its logical conclusion, the NRC positions stated in References 1 and 2 would infer that the NRC intends for all credible information received as OE, regardless of its source, to be evaluated at all sites under the operability determination process. In fact, since the NRC has issued non-cited violations, Entergy and PSEG must now enter these issues into their corrective action programs and take actions to restore compliance. This would likely entail revisions to procedures to require all incoming OE to be evaluated and dispositioned via operability determination. This would represent a very significant expansion in the scope of the process. Moreover, since these programs are fairly standard across the industry, these non-cited violations

now have generic importance. As communicated in recent public meetings with the NRC, the industry feels the operability determination process is already heavily overused and overly cumbersome, and places an undue burden on both the plant technical staff and the operations shift in the control room. The NRC positions stated in References 1 and 2 will have the net effect of compounding this problem.

The regulatory basis for the NCVs cited in References 1 and 2 is debatable:

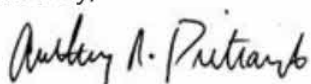
The NCVs refer to noncompliance with 10 CFR 50, Appendix B, Criterion V, for not following station procedures for conducting operability determinations. Criterion V is not an appropriate basis for the NCVs because there is nothing in the affected station procedures that would preclude the use of an OE extent-of-condition-style technical evaluation for this issue, nor is there anything in their procedures that would preclude exiting the operability determination procedure once entered. Since operability is a continuous process, it is the industry's view that the licensee appropriately entered the operability process when the immediate operability determinations were documented and then remained in that process while the safety concern was dispositioned by the technical evaluations within the corrective action program. Again, if confidence in the safety of continued plant operation had not been ultimately established, then this would be tantamount to losing the presumption of operability, and the licensees would have taken appropriate action.

The immediate conclusions around the presumption of operability that were made at an early stage at both Indian Point 3 and Salem 2 were appropriate. These conclusions were adequate to communicate the issue and its nuclear safety impact to the control room while further evaluation of the issue was completed under the corrective action program with input from Westinghouse. If there were technical shortcomings in the evaluations or conclusions reached by either Indian Point 3 or Salem 2, the licensees should instead be cited under Criterion XVI for failure to conduct an effective assessment of the OE and its impact on the safety of continuing to operate the units until the next scheduled refueling outage. The industry is not aware that the NRC has any concerns with the technical quality of the assessments documented in the licensees' corrective action programs.

Conclusion:

In conclusion, NEI believes there were no violations of NRC requirements at Indian Point 3 or Salem 2 in the conduct of the licensees' evaluations of the recently obtained BFB operating experience. The NRC should refrain from using the inspection and enforcement process to pursue the regulatory positions stated in References 1 and 2 and should instead address these issues through industry and stakeholder interactions as part of the ongoing effort to develop industry guidance on the application of the operability determination process.

Sincerely,



Anthony R. Pietrangelo

c: Mr. William M. Dean, NRR, NRC



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Sent through www.intermedia.com

From: [Wolfgang, Robert](#)
To: [Billerbeck, John](#)
Subject: FW: Platts Inside NRC
Date: Monday, May 16, 2016 5:58:42 AM
Attachments: [INRC 20160516.pdf](#)

The attached issue of Platts' "Inside NRC" publication, consisting of 8 pages, has only one item pertaining to Braidwood/Byron; it is withheld in full under FOIA exemption 4. The remaining items are non-responsive records.

Check out page 3.

Robert J. Wolfgang, PE
Senior Mechanical Engineer
U. S. Nuclear Regulatory Commission
301-415-1624

From: Library Resource
Sent: Friday, May 13, 2016 4:53 PM
To: EPUB - Inside NRC <EPUB-InsideNRC@nrc.gov>
Subject: FW: Platts Inside NRC

From: Platts
Sent: Friday, May 13, 2016 4:53:02 PM (UTC-05:00) Eastern Time (US & Canada)
To: Library Resource
Subject: [External_Sender] Platts Inside NRC

Platts McGraw Hill Financial



PLATTS INSIDE NRC

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Please find today's **Platts Inside NRC** attached.

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Kind regards,

The **Platts Inside NRC** team.

www.platts.com



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INSIDE NRC

Volume 38 / Number 10 / May 16, 2016

Non-Responsive Record

Non-Responsive Record

Non-Responsive Record

INSIDE THIS ISSUE

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From: [Lubinski, John](#)
To: [Alley, David](#); [Billerbeck, John](#)
Cc: [Ross-Lee, MaryJane](#)
Subject: FW: Preliminary Findings of the Exelon Backfit Panel - OUO- Pre-decisional - Internal NRC Use Only -
Date: Monday, August 01, 2016 7:20:10 AM
Importance: High

fyi

From: Holahan, Gary
Sent: Friday, July 29, 2016 1:58 PM
To: Mccree, Victor <Victor.McCree@nrc.gov>; Johnson, Michael <Michael.Johnson@nrc.gov>; Tracy, Glenn <Glenn.Tracy@nrc.gov>; Dean, Bill <Bill.Dean@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>; Mcginty, Tim <Tim.McGinty@nrc.gov>; Akstulewicz, Frank <Frank.Akstulewicz@nrc.gov>; Doane, Margaret <Margaret.Doane@nrc.gov>
Cc: Hackett, Edwin <Edwin.Hackett@nrc.gov>; West, Steven <Steven.West@nrc.gov>; Clark, Theresa <Theresa.Clark@nrc.gov>; Scarbrough, Thomas <Thomas.Scarbrough@nrc.gov>; Spencer, Michael <Michael.Spencer@nrc.gov>; Evans, Michele <Michele.Evans@nrc.gov>; Mcdermott, Brian <Brian.McDermott@nrc.gov>; Williamson, Edward <Edward.Williamson@nrc.gov>; Mizuno, Geary <Geary.Mizuno@nrc.gov>; Shuaibi, Mohammed <Mohammed.Shuaibi@nrc.gov>
Subject: Preliminary Findings of the Exelon Backfit Panel - OUO- Pre-decisional - Internal NRC Use Only -
Importance: High

Vic,
Margie,
Mike,
Glenn,
Bill,
John,
Tim,
Frank,

Based on a review of more than 50 documents (covering a period from 1971 to the present), and discussions with OGC staff, NRR staff, former NRR staff, and the CRGR, the Exelon Backfit Panel has developed Preliminary findings that it believes should be shared with NRC internal stakeholders.

Here is the Exelon Backfit Panel's roll-out plan for completing its work:

8/1/16 Provide Preliminary Findings to OEDO for information and feedback on scope and depth-of-review and other expectations
8/2/16 Provide Preliminary Findings to NRR (and former NRR staff) and OGC for completeness and accuracy ... "fact checking"
8/9/16 Collect any comments
8/19/16 RES provides insights on risk and safety significance
8/19/16 Prepare Draft final Report with findings, response to questions, and recommendations.

8/29/16 Provide final Report to EDO

The Panel will be available for discussion of any issues or concerns during the weeks of 8/1/16 and 8/8/16.

Gary

From: [Alley, David](#)
To: [Lubinski, John](#); [Billerbeck, John](#)
Cc: [Ross-Lee, MaryJane](#)
Subject: FW: Providing EDO feedback on the byron backfit issue
Date: Tuesday, August 30, 2016 1:35:06 PM
Attachments: [NP-2770-LDV1.pdf](#)
[NRR Perspectives OEDO Backfit Panel Findings IMW.docx](#)

John Lubinski

My initial reaction is that this is a bit understated from what it could be. Additionally, the issue of code compliance or relief request appears to be substantially missing

John Billerbeck

Please take a look at this and drop by to discuss

Dave

From: Lubinski, John
Sent: Tuesday, August 30, 2016 11:54 AM
To: Alley, David <David.Alley@nrc.gov>
Cc: Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>
Subject: FW: Providing EDO feedback on the byron backfit issue

Any comments on this?

From: Whitman, Jennifer
Sent: Tuesday, August 30, 2016 11:48 AM
To: Taylor, Robert <Robert.Taylor@nrc.gov>; Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>; Boland, Anne <Anne.Boland@nrc.gov>; Benner, Eric <Eric.Benner@nrc.gov>; Wilson, George <George.Wilson@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>
Subject: RE: Providing EDO feedback on the byron backfit issue

I've modified the second to last bullet to better incorporate the EPRI test data in the attached PDF. I've highlighted the appropriate passages (pages 28 and 53 of the PDF).

From: Taylor, Robert
Sent: Tuesday, August 30, 2016 7:03 AM
To: Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>; Boland, Anne <Anne.Boland@nrc.gov>; Benner, Eric <Eric.Benner@nrc.gov>; Wilson, George <George.Wilson@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>
Cc: Whitman, Jennifer <Jennifer.Whitman@nrc.gov>
Subject: RE: Providing EDO feedback on the byron backfit issue

All,

Per Bill's request, I have drafted the attached one-pager. Please consider it rough and

provide any comments you have. Jen, please fact check for me.

Rob

From: Dean, Bill

Sent: Monday, August 29, 2016 6:04 PM

To: Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>; Boland, Anne <Anne.Boland@nrc.gov>; Benner, Eric <Eric.Benner@nrc.gov>; Wilson, George <George.Wilson@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>; Taylor, Robert <Robert.Taylor@nrc.gov>

Cc: McDermott, Brian <Brian.McDermott@nrc.gov>; Evans, Michele <Michele.Evans@nrc.gov>

Subject: Providing EDO feedback on the byron backfit issue

I asked mike johnson about getting with Vic before he signs out the backfit appeal package and he thought that was good to do – he indicated he and Vic are both just starting to read it. I would be interested in a handful of key talking points that the staff would like to make sure we share with him. I heard some things this morning re: certain recommended taskings that we think are way off base, but I would also like to reinforce where we have issues with certain references that were relied upon and flaws in their technical views re: water qualification. Maybe in a couple of days?

BILL

NRR Perspectives OEDO Backfit Panel Findings

- NRR appreciates the panel's efforts. However, NRR believes that the panel's perspectives do not provide sufficient basis to overturn the backfit.
- The panel's position is reliant on its interpretation of the 1977 Information SECY. The panel has provided select quotes from that SECY that it believes supports its position. NRR believes that when the entire SECY is reviewed it becomes clear that the SECY was simply documenting current practices in 1977 and does not provide a "known and established standard." The staff contends that if the 1977 SECY had been intended to provide the "known and established standard" it would have been included in subsequent updates to regulations, regulatory guides, and SRPs over the following nearly 40 years. It has not.
- In numerous places the panel quotes documents that it interprets as describing the treatment of check valves as analogous to PSVs. The panel did not find any definitive documentation that demonstrates that the agency concluded that PSVs are analogous to check valves and, as such, should be considered passive components. This appears to be the panel's judgement, not an NRC position. NRR disagrees with the panel's interpretation and has historically treated PSVs as active components, including designating them as such during license renewal. PSVs are designed to perform a specific RCS overpressure protection safety function critical to protecting one of the key defense-in-depth barriers to protect public health and safety from the release of radioactive materials. The staff believes the panel's comparison is inappropriate and establishes a very concerning precedent.
- On page 13, the panel acknowledges the licensing basis for Byron and Braidwood characterizes the PSVs and PORVs as active components. However, the panel, given its reliance on treating PSVs akin to check valves, establishes a new and different position in its own summary when it determines these valves should be treated as passive components at Byron and Braidwood for the purposes of considering the single failure criterion.
- The panel asserts in its summary that the valves in question where water qualified due to the licensee's reliance on them to pass water during feedline break events. The panel does not appear to acknowledge that feedline breaks are Condition IV events, similar to LOCAs, which are never expected to occur in the lifetime of the facilities and therefore, given their lower probability of occurrence, are permitted to have more significant consequences. The EPRI testing demonstrated acceptable performance under conditions anticipated during these Condition IV events (higher temperature fluid ~ 650°F), while the EPRI test at not the more likely Condition II inadvertent mass addition event conditionss (lower temperature fluid ~550 °F) was terminated early due to valve chatter on opening. The summary of the EPRI testing indicated that for subcooled water conditions valve chatter and resultant valve damage was generally observed.
- NRR agrees with the panel that risk insights are important considerations. However, consistent with RG 1.174, risk insights must include consideration of defense-in-depth and safety margins. If a PSV were to stick open or significantly leak at Bryon and Braidwood during a licensing basis Condition II event, which is anticipated to occur on an annual frequency, the licensee has not demonstrated adequate defense-in-depth. NRR is open to considering risk-informed licensing basis changes, or potential plant modifications, that appropriately considers all 5 elements of RG 1.174.

Comment [WJ]: There was some EPRI testing done at both conditions, but the test at the lower temperatures for the BB type valve experienced significant enough valve chattering that the test was ended early. The real issue/difference between the feedline break and the high pressure injection is the expected temperature of the fluid that passes through the valve.

From: [Alley, David](#)
To: [Taylor, Robert](#)
Cc: [Lubinski, John](#); [Billerbeck, John](#)
Subject: FW: Providing EDO feedback on the byron backfit issue
Date: Wednesday, August 31, 2016 10:53:07 AM
Attachments: [NP-2770-LDV1.pdf](#)
[NRR Perspectives OEDO Backfit Panel Findings IMW.docx](#)

Rob,

John Lubinski requested that we review the backfit one pager and comment to you. We (John Billerbeck and I) propose an additional bullet which gets to the heart of regulatory compliance

We propose

- 10 CFR 50.55a requires nuclear power plants to be initially designed and constructed IAW ASME Boiler and Pressure Vessel Code (BPVC), Section III and to be tested throughout their service life IAW ASME OM Code. These codes comprise the qualification standards for ASME Class 1 safety valves such as the pressurizer PSVs with which licensees are required to comply unless alternatives have been authorized by the staff IAW 10 CFR 50.55a. Byron and Braidwood are not in compliance with the ASME Code and do not possess an NRC approved alternative. Therefore Byron and Braidwood are not in compliance with the Code of Federal Regulations.

Dave

From: Lubinski, John
Sent: Tuesday, August 30, 2016 11:54 AM
To: Alley, David <David.Alley@nrc.gov>
Cc: Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>
Subject: FW: Providing EDO feedback on the byron backfit issue

Any comments on this?

From: Whitman, Jennifer
Sent: Tuesday, August 30, 2016 11:48 AM
To: Taylor, Robert <Robert.Taylor@nrc.gov>; Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>; Boland, Anne <Anne.Boland@nrc.gov>; Benner, Eric <Eric.Benner@nrc.gov>; Wilson, George <George.Wilson@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>
Subject: RE: Providing EDO feedback on the byron backfit issue

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Sent: Tuesday, August 30, 2016 7:03 AM
To: Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>;

Boland, Anne <Anne.Boland@nrc.gov>; Benner, Eric <Eric.Benner@nrc.gov>; Wilson, George <George.Wilson@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>

Cc: Whitman, Jennifer <Jennifer.Whitman@nrc.gov>

Subject: RE: Providing EDO feedback on the byron backfit issue

All,

Per Bill's request, I have drafted the attached one-pager. Please consider it rough and provide any comments you have. Jen, please fact check for me.

Rob

From: Dean, Bill

Sent: Monday, August 29, 2016 6:04 PM

To: Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>; Boland, Anne <Anne.Boland@nrc.gov>; Benner, Eric <Eric.Benner@nrc.gov>; Wilson, George <George.Wilson@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>; Taylor, Robert <Robert.Taylor@nrc.gov>

Cc: McDermott, Brian <Brian.McDermott@nrc.gov>; Evans, Michele <Michele.Evans@nrc.gov>

Subject: Providing EDO feedback on the byron backfit issue

I asked mike johnson about getting with Vic before he signs out the backfit appeal package and he thought that was good to do – he indicated he and Vic are both just starting to read it. I would be interested in a handful of key talking points that the staff would like to make sure we share with him. I heard some things this morning re: certain recommended taskings that we think are way off base, but I would also like to reinforce where we have issues with certain references that were relied upon and flaws in their technical views re: water qualification. Maybe in a couple of days?

BILL

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- In numerous places the panel quotes documents that it interprets as describing the treatment of check valves as analogous to PSVs. The panel did not find any definitive documentation that demonstrates that the agency concluded that PSVs are analogous to check valves and, as such, should be considered passive components. This appears to be the panel's judgement, not an NRC position. NRR disagrees with the panel's interpretation and has historically treated PSVs as active components, including designating them as such during license renewal. PSVs are designed to perform a specific RCS overpressure protection safety function critical to protecting one of the key defense-in-depth barriers to protect public health and safety from the release of radioactive materials. The staff believes the panel's comparison is inappropriate and establishes a very concerning precedent.
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- NRR agrees with the panel that risk insights are important considerations. However, consistent with RG 1.174, risk insights must include consideration of defense-in-depth and safety margins. If a PSV were to stick open or significantly leak at Bryon and Braidwood during a licensing basis Condition II event, which is anticipated to occur on an annual frequency, the licensee has not demonstrated adequate defense-in-depth. NRR is open to considering risk-informed licensing basis changes, or potential plant modifications, that appropriately considers all 5 elements of RG 1.174.

Comment [WJ]: There was some EPRI testing done at both conditions, but the test at the lower temperatures for the BB type valve experienced significant enough valve chattering that the test was ended early. The real issue/difference between the feedline break and the high pressure injection is the expected temperature of the fluid that passes through the valve.

From: [Alley, David](#)
To: [Billerbeck, John](#)
Subject: FW: Status of Backfit Appeal Response Memo
Date: Wednesday, December 14, 2016 1:05:00 PM

From: Garmoe, Alex
Sent: Wednesday, December 14, 2016 11:42 AM
To: Oesterle, Eric <Eric.Oesterle@nrc.gov>; Alley, David <David.Alley@nrc.gov>; Whitman, Jennifer <Jennifer.Whitman@nrc.gov>
Subject: RE: Status of Backfit Appeal Response Memo

I heard from Richard Bright in NRR's work planning group that non-billable CAC A11008 would be an appropriate place to charge time spent on this effort. I'll keep the RIS TAC open since it is possible (and likely) that we'll end up resuming effort on it down the road.

Alex

From: Oesterle, Eric
Sent: Tuesday, December 13, 2016 4:27 PM
To: Alley, David <David.Alley@nrc.gov>; Garmoe, Alex <Alex.Garmoe@nrc.gov>; Whitman, Jennifer <Jennifer.Whitman@nrc.gov>
Subject: Re: Status of Backfit Appeal Response Memo

Agreed. We've already started investigating extent of condition.

Eric

From: Alley, David
Sent: Tuesday, December 13, 2016 1:55 PM
To: Garmoe, Alex; Oesterle, Eric; Whitman, Jennifer
Subject: RE: Status of Backfit Appeal Response Memo

I see no reason to hold off with proceeding. If we get a change of direction from on high we will still likely need all the info and thought processes to get through the 2.206 petition so I really don't see a downside to progress.

Dave

From: Garmoe, Alex
Sent: Tuesday, December 13, 2016 1:36 PM
To: Oesterle, Eric <Eric.Oesterle@nrc.gov>; Alley, David <David.Alley@nrc.gov>; Whitman, Jennifer <Jennifer.Whitman@nrc.gov>
Subject: RE: Status of Backfit Appeal Response Memo

Out of curiosity, have any of you heard when staff should start moving on the actions laid out in the response plan to the EDO? Wait until Bill signs the memo or go ahead and start moving? Just wondering so I can assist, to the extent you'd like, with tracking progress and looking ahead.

Thanks,
Alex

From: Garmoe, Alex

Sent: Monday, December 12, 2016 4:53 PM

To: Oesterle, Eric <Eric.Oesterle@nrc.gov>; Alley, David <David.Alley@nrc.gov>; Whitman, Jennifer <Jennifer.Whitman@nrc.gov>

Subject: Status of Backfit Appeal Response Memo

Greetings,

The B/B backfit appeal response memo was provided to the front office for review, concurrence, and signature this afternoon. Now we await comments and edits. The drop dead date to send it to the EDO is January 13.

Thanks,



Alexander D. Garmoe

Senior Project Manager

Generic Communications Branch (PGCB)
Division of Policy and Rulemaking (DPR)
Office of Nuclear Reactor Regulation (NRR)
Alex.Garmoe@nrc.gov | 301-415-3814

From: McDermott, Brian
Sent: 2 Sep 2016 09:15:11 -0400
To: Dean, Bill
Subject: Fwd: Providing EDO feedback on the byron backfit issue
Attachments: NRR Perspectives OEDO Backfit Panel Findings.docx

Does the attached product provide the level of detail you were looking for?

Begin Forwarded Message:

From: "Taylor, Robert" <Robert.Taylor@nrc.gov>
Subject: RE: Providing EDO feedback on the byron backfit issue
Date: 31 August 2016 15:26
To: "Dean, Bill" <Bill.Dean@nrc.gov>, "McDermott, Brian" <Brian.McDermott@nrc.gov>
Cc: "Evans, Michele" <Michele.Evans@nrc.gov>, "Ross-Lee, MaryJane" <MaryJane.Ross-Lee@nrc.gov>, "Lubinski, John" <John.Lubinski@nrc.gov>, "Boland, Anne" <Anne.Boland@nrc.gov>, "Benner, Eric" <Eric.Benner@nrc.gov>, "Wilson, George" <George.Wilson@nrc.gov>, "McGinty, Tim" <Tim.McGinty@nrc.gov>

Bill/Brian,

Attached is the staff's proposed response to the panel's backfit report.

Please let us know if you have any questions.

Rob

From: Dean, Bill
Sent: Monday, August 29, 2016 6:04 PM
To: Ross-Lee, MaryJane <MaryJane.Ross-Lee@nrc.gov>; Lubinski, John <John.Lubinski@nrc.gov>; Boland, Anne <Anne.Boland@nrc.gov>; Benner, Eric <Eric.Benner@nrc.gov>; Wilson, George <George.Wilson@nrc.gov>; McGinty, Tim <Tim.McGinty@nrc.gov>; Taylor, Robert <Robert.Taylor@nrc.gov>
Cc: McDermott, Brian <Brian.McDermott@nrc.gov>; Evans, Michele <Michele.Evans@nrc.gov>
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where we have issues with certain references that were relied upon and flaws in their technical views re: water qualification. Maybe in a couple of days?

BILL

NRR Perspectives OEDO Backfit Panel Findings

- NRR appreciates the panel's efforts. However, NRR believes that the panel's perspectives do not provide sufficient basis to overturn the backfit.
- NRR Concerns
 - The panel has narrowly focused its review on the water qualification question. NRR maintains that the original backfit documents numerous issues with the licensing basis for Byron and Braidwood that have not been addressed in the panel's assessment.
 - With regard to the PSV water qualification question, the panel's position is reliant on its interpretation of the 1977 Information SECY. The panel has provided select quotes from that SECY that it believes supports its position. NRR believes that when the entire SECY is reviewed it becomes clear that the SECY was simply documenting current practices in 1977, some of which were still being researched, and does not provide a "known and established standard." The staff contends that if the 1977 SECY had been intended to provide the "known and established standard" it would have been included in subsequent updates to regulations, regulatory guides, and SRPs over the following nearly 40 years. It has not.
 - In numerous places the panel quotes documents that it interprets as describing the treatment of check valves as analogous to PSVs. The panel did not find any definitive documentation that demonstrates that the agency concluded that PSVs are analogous to check valves and, as such, should be considered passive components. This appears to be the panel's judgement, not an NRC position. NRR disagrees with the panel's interpretation and has historically treated PSVs as active components, including designating them as such during license renewal. PSVs are designed to perform a specific RCS overpressure protection safety function critical to protecting one of the key defense-in-depth barriers to protect public health and safety from the release of radioactive materials. The staff believes the panel's comparison is inappropriate and establishes a very concerning precedent.
 - On page 13, the panel acknowledges the Byron/Braidwood licensing basis as categorizing the PSVs and PORVs as active components. However, the panel, given its reliance on treating PSVs akin to check valves, establishes a new and different position in its own summary when it determines these valves should be treated as passive components for the purposes of considering the single failure criterion.
 - Regarding ASME, 10 CFR 50.55a requires nuclear power plants to be initially designed and constructed IAW ASME Boiler and Pressure Vessel Code (BPVC), Section III and to be tested throughout their service life IAW ASME OM Code. These codes comprise the qualification standards for ASME Class 1 safety valves such as the pressurizer PSVs with which licensees are required to comply unless alternatives have been authorized by the staff IAW 10 CFR 50.55a.
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- Path forward
 - If the EDO supports the original backfit, NRR agrees with the panel that risk insights are important considerations in determining how reasonable assurance of compliance can be demonstrated. However, as acknowledged by the panel, consistent with RG 1.174, risk insights must include consideration of defense-in-depth and safety margins. If a PSV were to stick open or significantly leak at Bryon and Braidwood during a licensing basis Condition II event, which is anticipated to occur on an annual frequency, the licensee has not yet demonstrated adequate defense-in-depth. NRR is open to considering risk-informed licensing basis changes, or potential plant modifications, that appropriately consider all 5 elements of RG 1.174.
 - If the EDO supports the Backfit Panel's conclusion, NRR requests that the EDO allow the staff to independently assess what path forward is appropriate given the positions documented in the panel's report and EDO's decision. In particular, NRR has concerns regarding the recommendations on page 3 of the report that need to be further considered before determining what future course of action is most appropriate.

From: [McGinty, Tim](#)
To: [McDermott, Brian](#); [Lubinski, John](#); [Benner, Eric](#); [Billerbeck, John](#)
Cc: [Bailey, Marissa](#); [Whitman, Jennifer](#); [Hickey, James](#)
Subject: Fwd: Backfit Panel Response - Final
Date: Wednesday, August 10, 2016 7:43:27 PM
Attachments: [Backfit Panel Response Final.docx](#)

Brian - this is the final version that we will be meeting with you to align on Thursday morning. Minor changes were made in comparison to the version I gave you. Tim

From: "Whitman, Jennifer" <Jennifer.Whitman@nrc.gov>
Subject: Backfit Panel Response - Final
Date: 10 August 2016 18:05
To: "McGinty, Tim" <Tim.McGinty@nrc.gov>

Tim,

I believe I have addressed all of the comments we discussed. If you agree please forward to those attending the meeting with Brian or give me the OK to do so.

Thanks,

Jennifer Whitman

Acting Technical Assistant
NRR/DSS
Office: O10 – H22
Phone: (301) 415-3253

**Staff Response to
Exelon Backfit Appeal Panel Preliminary Findings**

On August 2, 2016, the NRR staff received a three-page summary of the preliminary findings of the OEDO backfit appeal panel. The staff recognizes that the OEDO panel has performed a much more thorough review than can be documented within three pages. As such, the staff's review and comments as provided below, reflects its considerations of this short summary. The staff is willing to meet with the panel again to discuss the concerns and positions documented in this response.

(b)(5)



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Withheld pursuant to exemption

(b)(5)

of the Freedom of Information and Privacy Act

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Withheld pursuant to exemption

(b)(5)

of the Freedom of Information and Privacy Act

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Withheld pursuant to exemption

(b)(5)

of the Freedom of Information and Privacy Act

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Withheld pursuant to exemption

(b)(5)

of the Freedom of Information and Privacy Act

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Withheld pursuant to exemption

(b)(5)

of the Freedom of Information and Privacy Act

From: Clark, Theresa
Sent: 15 Sep 2016 09:59:29 -0400
To: Dean, Bill;Evans, Michele;McDermott, Brian;McGinty, Tim;Lubinski, John;Correia, Richard
Cc: Holahan, Gary;Keene, Todd
Subject: FYI: backfit appeal documents signed

Good morning, all!

This morning, Vic signed the three documents associated with the Byron/Braidwood backfit appeal. They are being processed now, and we expect that they (along with the panel documents referenced within) will be made publicly available in ADAMS later today. Please let me know if you have any questions. Thanks!

- **Letter responding to Exelon:** [ML16243A067](#)
- **Letter responding to NEI:** [ML16246A150](#)
- **Memo to NRR:** [ML16246A247](#)

All 3 records are publicly available in ADAMS

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Theresa Valentine Clark
Executive Technical Assistant (Reactors)
U.S. Nuclear Regulatory Commission
Theresa.Clark@nrc.gov | 301-415-4048 | O-16E22

From: Miller, Ed
Sent: 11 Jul 2016 15:43:47 -0400
To: Hauser, Jennifer;Wiebe, Joel
Subject: FYI

At the 1000 meeting today, Anne indicated that Gary Holihan may be reaching out to one or both of you regarding the Byron/Braidwood backfit. Not sure what info he would be looking for, but wanted to give you a heads up that you may get a call. If you need more info, let me know and I can pursue.

Ed

From: [Keene, Todd](#)
To: [Lubinski, John](#); [McGinty, Tim](#)
Cc: [Taylor, Robert](#); [Ross-Lee, MaryJane](#); [Oesterle, Eric](#); [Stuchell, Sheldon](#); [Alley, David](#); [Whitman, Jennifer](#); [Wolfgang, Robert](#); [Farnan, Michael](#)
Subject: INFO: EDO Tasking - Technical Evaluation and RIS 2005-29 Disposition
Date: Friday, October 07, 2016 1:04:26 PM
Attachments: [EDO Letter to NRR Sept 15 2016.pdf](#)

This attachment is publicly available in ADAMS as ML16246A247.

Division Directors,

The EDO issued the attached letter in response to the findings of the Byron and Braidwood (B-B) Backfit Appeal Review Panel.

In the letter, the EDO directed NRR to provide a plan to address two issues:

- 1) The underlying technical issue regarding pressurizer safety valve (PSV) performance after water discharge at pressurized-water reactors, and
- 2) Assess the staff positions included in Regulatory Issue Summary (RIS) 2005-29 and the proposed revision 1 that has been drafted and is on-hold.

On 10/6, staff members from DE/EPNB and DSS/SRXB held an initial meeting to identify roles and responsibilities and to develop a notational timeline to address the EDO direction. DE/EPNB was familiar with the specific issue that was noted in the backfit appeal, however, they noted that additional research is required to accurately determine the scope of the issue.

DSS/SRXB was the lead for RIS 2005-29 Rev 1, which was written to supersede RIS 2005-29. The methodology and examples provided in the revised RIS will need to be evaluated and updated to reflect the denial of the B-B backfit for the non-water qualified PSVs. Additional information from DE/EPNB is required before an assessment of the generic communication process can be completed.

The following milestones are provided for your information:

- 10/21 - Complete initial evaluation of the technical issue (DE/EPNB)
- Week of 10/24 – DE / DSS Staff meeting to discuss DE findings
 1. Identify the scope of the issue
 2. Propose a product (generic communication; reg guide; etc) to address the underlying technical issue regarding the PSV.
 3. Determine path forward concerning RIS 2005-29 and the draft revision.
 4. Generate timeline for proposed plan
- Week of 10/31 – Provide plan to DE / DSS Leadership
- Week of 11/14 – Provide plan to NRR (tentative)

Todd

Todd Keene
Project Manager
NRR/DPR/PGCB
(301)415-1994

From: [Keene, Todd](#)
To: [Lubinski, John](#); [McGinty, Tim](#)
Cc: [Taylor, Robert](#); [Ross-Lee, MaryJane](#); [Oesterle, Eric](#); [Stuchell, Sheldon](#); [Alley, David](#); [Whitman, Jennifer](#); [Wolfgang, Robert](#); [Farnan, Michael](#); [Billerbeck, John](#); [Garmoe, Alex](#)
Subject: INFO: EDO Tasking - Technical Evaluation and RIS 2005-29 Disposition
Date: Friday, October 28, 2016 3:41:59 PM

Division Directors,

Staff members from DE/EPNB and DSS/SRXB met on 10/26. EPNB intends to finalize the research of the ASME O&M code concerning steam and water qualified relief valves.

The staff agreed that there are several potential options at this time, but once the technical evaluation is complete, the staff will have enough information to provide a more definitive plan.

This plan should be presented to you during the week of Nov 14.

The following milestones are provided for your information:

- By 11/4 – Complete initial evaluation of the technical issue (DE/EPNB)
 - DE / DSS Staff meeting to discuss DE findings
 - 1. Identify the scope of the issue
 - 2. Propose a product (generic communication; reg guide; etc) to address the underlying technical issue regarding the PSV.
 - 3. Determine path forward concerning RIS 2005-29 and the draft revision.
 - 4. Generate timeline for proposed plan
- Week of 11/14 – Provide plan to DE / DSS Leadership
- Week of 11/21 – Provide plan to NRR (tentative)

Todd

Todd Keene
Project Manager
NRR/DPR/PGCB
(301)415-1994

From: [Wiebe, Joel](#)
To: [Billerbeck, John](#); [Banic, Merrilee](#); [Sun, Summer](#); [Case, Michael](#); [Figueroa Toledo, Gladys](#); [Kirkwood, Sara](#); [Drzewiecki, Timothy](#)
Subject: Miranda 2.206 Petition
Date: Wednesday, January 11, 2017 4:18:52 PM
Attachments: [Issues from Miranda 2-206 Petition.docx](#)

Attached is my first screening of the items in the petition.

Please provide comments or markups by 1/19.

In addition to the attached my thoughts are that:

1. Since the issues involved are not resolved, but under review at the direction of the EDO (ML16246A247), we don't meet the criteria for rejecting the petition on the grounds that the issues have been the subject of NRC staff review and have been resolved.
2. I think we should strongly consider denying the requested enforcement in the petition since they are not supported by the claims, but take the action to refer the appropriate issues to the plan developed to respond to the EDO dated Jan 3, 2017 (ML16334A188). This actually would be granting the petition, in part.

Joel

Issues from Miranda 2.206 Petition

Actions Requested

1. Revoke the Licensee's authorizations to operate its Byron and Braidwood Stations at any uprated power level.
2. Impose a license condition, on current operations, requiring the Licensee to provide an acceptable demonstration of compliance with the aforementioned design requirement.
3. Require the Licensee to file a 10 CFR §21 report regarding its statement of no significant hazards.

Issue Details

1. Licensee evaluations of certain anticipated operational occurrences (AOOs) are rife with errors, and omissions.
 - a. The Licensee's unnecessary overpressure analysis reveals a lack of understanding of the IOECCS. {Error 1}

PM Comment – The petitioner claims that the licensee's overpressure analysis is unnecessary. NUREG-0800, SRP, 15.5.1, "Inadvertent Operation of ECCS," Rev. 1, Section II, "Acceptance Criteria" cites GDC 15, as it relates to the RCS being designed to assure that the pressure boundary will not be breached during AOOs. The NRC staff in its SE dated May 4, 2001, related to the Braidwood/Byron uprate, acknowledged that the acceptance criteria included ensuring that the peak RCS pressure remain less than the Safety Limit of 110 percent of design.

- b. The Licensee's unnecessary DNB analysis reveals a lack of understanding of the IOECCS. {Error 2}

PM Comment – The licensee in its application for uprate dated July 5, 2000 (ADAMS ML003730536), states in Section 6.2.20.1 that an SI signal normally results in a reactor trip, but any single fault that actuates the ECCS will not necessarily result in a reactor trip. The DNB analysis appears to be an effort by the licensee to provide a comprehensive analysis. The NRC staff in its SE dated May 4, 2001, related to the Braidwood/Byron uprate, acknowledged that the acceptance criteria included ensuring the calculated DNBR remains greater than the safety limit.

- c. The licensing basis (Exelon Letter dated July 5, 2000, nor UFSAR, Revision 15 (ADAMS ML14363A393)) does not provide an analysis or evaluation to demonstrate that the non-escalation requirement is satisfied. {Omission 1}

PM Comment – Exelon's July 5, 2000, letter states in Section 6.2.20.2 that the criteria for Condition II events include not generating a more serious plant condition. Exelon further states in this section that the PSVs not reseating is an analyzed event, which is also a Condition II event and refers to the appropriate

section for this event. In response to a request for additional information, Exelon, in a letter dated January 31, 2001 (ADAMS ML010330145) states that the EPRI testing supports the conclusion that the spurious SI event would not transition to a higher condition event and provided supporting information. The NRC staff in its May 4, 2001, SE states that the NRC staff finds that the PORVs, block valves, and associated discharge piping are qualified for the spurious SI event fluid conditions. Note that this finding results in the fact that it would be unlikely for the pressure to reach the PSV setting because the PORVs actuate at a lower pressure. The NRC staff also concludes that the licensee's crediting of the PSVs to discharge liquid water during the spurious SI event to be acceptable.

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), the EDO concluded that, “. . . when preparing the safety evaluations associated with two license amendments in 2001 and 2004 (referred to as the Uprate SE and the Setpoint SE), the NRC staff exercised reasonable and well-informed engineering judgment to conclude that the PSVs were unlikely to stick in the fully open position.

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), the EDO tasked NRR to inform him of NRRs plan to reassess the underlying technical issue in NSAL-93-013, as well as RIS 2005-29 and its proposed Revision 1. This reassessment includes the reassessment of PSV performance after water discharge.

- d. The missing non-escalation case analysis reveals a lack of understanding of the IOECCS. {Error 3}

PM Comment – The licensee concluded in its January 31, 2001, supplement that the event will not progress into a higher condition event and provided supporting information. The NRC staff in its May 4, 2001, SE determined the licensee's conclusion to be acceptable.

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), the EDO concluded without the presumption of PSV failure to reseal, the concerns in the Backfit SE related to event classification, event escalation, and compliance with 10 CFR 50.34(b) and General Design Criteria 15, 21, and 29 are no longer at issue.

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), The EDO tasked NRR to inform him of NRRs plan to reassess the underlying technical issue in NSAL-93-013, as well as RIS 2005-29 and its proposed Revision 1. This reassessment includes the reassessment of the progression of the inadvertent ECCS event described in RIS 2005-29 and its proposed Revision 1.

- e. The IOECCS evaluation is either non-conservative, or based upon a requirement to prevent the PORVs from opening. Either of these interpretations indicates the Licensee lacks an understanding of the IOECCS. {Also identified as Error 3 in the petition}

PM Comment – Assuming the PORVs to not open is conservative from an overpressure consideration, since the PORVs would act to keep pressure from reaching the PSV setpoint. Even so, the licensee determined that the event is acceptable and the NRC staff determined the licensee's analysis was acceptable. In the licensee's July 5, 2000, submittal, section 6.2.20.2, it states that for the DNBR analysis of the spurious SI event, the PORVs are assumed to actuate to maintain a lower RCS pressure because that is conservative with respect to DNBR. In its January 31, 2001, supplement, the licensee states that normally, the PORVs will automatically open by means of the control system grade actuation circuit, preventing the RCS pressure from ever reaching the PSV lift setpoint. The NRC staff in its May 4, 2001, SE states that the NRC staff finds that the PORVs, block valves, and associated discharge piping are qualified for the spurious SI event fluid conditions.

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), The EDO tasked NRR to inform him of NRR's plan to reassess the underlying technical issue in NSAL-93-013, as well as RIS 2005-29 and its proposed Revision 1. This reassessment includes the reassessment of the progression of the IOECCS event described in RIS 2005-29 and its proposed Revision 1.

- f. There is no description of how the PORVs would respond to an IOECCS. {Omission 2}

PM Comment – In the licensee's July 5, 2000, submittal, section 6.2.20.2, it states that for the DNBR analysis of the spurious SI event, the PORVs are assumed to actuate to maintain a lower RCS pressure because that is conservative with respect to DNBR. In its January 31, 2001, supplement, the licensee states that normally, the PORVs will automatically open by means of the control system grade actuation circuit, preventing the RCS pressure from ever reaching the PSV lift setpoint. The NRC staff in its May 4, 2001, SE states that the NRC staff finds that the PORVs, block valves, and associated discharge piping are qualified for the spurious SI event fluid conditions.

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), The EDO tasked NRR to inform him of NRR's plan to reassess the underlying technical issue in NSAL-93-013, as well as RIS 2005-29 and its proposed Revision 1. This reassessment includes the reassessment of the progression of the IOECCS event described in RIS 2005-29 and its proposed Revision 1.

- g. The Licensee does not justify the use of PSVs, in lieu of PORVs, to respond to AOOs. {Omission 3}

PM Comment – see the previous PM comments

- h. The Licensee makes an invalid comparison between two dissimilar events (Inadvertent PSV opening and the IOECCS, with a stuck open PSV). {Error 4}

PM Comment – In its January 31, 2001, letter the licensee concluded that the PSVs will reclose and any leakage will be less than one stuck open PSV. The NRC staff in its May 4, 2001, SE states that a review of the EPRI test data indicates that the PSVs may chatter but any resulting seat leakage would be less than the discharge from one stuck-open PSV, which is an analyzed event. The comparison is between the resulting leakage from the events, not the events themselves.

- i. The Licensee claims that ECCS flow will match PSV water relief rate. {Also identified as Error 4 in the petition}

PM Comment – The licensee clarifies in the UFSAR Section 15.5.1.2 that the inadvertent operation of the ECCS event does not progress into a stuck open PSV. See above PM comments regarding this licensee position and NRC findings accepting this position. In context, the licensee is describing the water relief through the PSVs that results from the inadvertent ECCS flow. The licensee and the NRC acknowledges that the PSVs would cycle open and closed, and as long as the PSV function to cycle open and closed, the average flow would be equivalent to the water being added by the ECCS.

- j. The Licensee fails to use due diligence when passing on Vendor-supplied information to the NRC. {Error 5}

PM Comment – This statement is based on the issue in item i, above, which was based on a Westinghouse document. See PM comment, above.

- k. The Licensee claims that the ECCS is a normal RCS makeup system. {Error 6}

PM Comment – The petitioner's statement appears to result from his position that the PSV is stuck open. In the UFSAR, the licensee has clarified that their position is that the inadvertent SI does not result in a stuck open PSV. The licensee's position is that any leakage would be less than a stuck open PSV.

- l. The Licensee failed to identify and correct INEL's error in stating that the IOECCS will challenge both the PSVs and PORVs. The Licensee transmitted INEL's report to the NRC staff without verifying its accuracy. {Error 7}

For the DNBR analysis, the licensee assumed the PORVs would respond. For the overpressure analysis, the licensee assumed the PSVs would respond. In its May 4, 2001, SE, the NRC acknowledges both the PORVs and PSVs would discharge liquid. Based on the different assumptions used to provide conservative analyses in either case, one case results in the PORVs passing water and the other case results in the PSVs passing water. Notwithstanding the terminology used, the wording does not appear to have a material impact on the licensee's analysis nor the NRC's acceptance of the analysis.

- m. The Licensee did not provide the valve test results needed to qualify the PSVs for water relief. {Omission 4}

PM Comment – Probably true, especially if we are thinking ASME qualified. I don't think anyone believes or assumes the valves are ASME qualified to relieve water. In its May 4, 2001, SE the NRC staff states that the EPRI tests adequately demonstrate the performance of the valves for the expected water temperature conditions and that there is reasonable assurance that the valves will adequately reseal following the spurious SI event.

PM Comment - By memorandum dated September 15, 2016 (ADAMS ML16246A247), the EDO stated that the NRC staff's determination that ASME BPV Code certification is necessary for PSVs first appears in the Backfit SE and is not addressed in any of the final NRC requirements or guidance documents reviewed by the Panel. As such, the NRC staff's position on valve qualification in the Backfit SE represents a new or modified interpretation of what constitutes compliance in addressing potential PSV failures following water discharge.

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), The EDO tasked NRR to inform him of NRRs plan to reassess the underlying technical issue in NSAL-93-013, as well as RIS 2005-29 and its proposed Revision 1. This reassessment includes the reassessment of PSV performance after water discharge.

- n. The Licensee analysis requires the PSVs relieve water, and then reseal. {Error 8}

PM Comment – See previous comment.

- o. The Licensee does not describe the design change process it used, including quality controls, to determine, and specify the functional, and component requirements for PSVs, when operated during AOOs (e.g., the IOECCS). {Omission 5}

PM comment – See previous comment.

- p. The Licensee fails to meet the GDC 21 single failure requirement. {Error 9}

PM Comment – See previous comment.

- q. The Licensee does not evaluate potential damage to the PSVs. {Omission 6}

PM Comment – See previous comment

- r. Application of the PSVs comes too late to meet the non-escalation requirement. {Error 10}

PM Comment – This statement appears to be the result of a misapplication of the AOO Condition II criterion that states, “. . . shall be accommodated with, at most, a shutdown of the reactor.” A review of the Condition III criterion in the UFSAR shows that, “. . . shall be accommodated with the failure of only a small fraction of the fuel rods, although sufficient fuel damage might occur to preclude resumption of operation for a considerable outage time.” The petitioner use the

fact that the PSVs would lift after the high pressure reactor trip occurred, as evidence that the event has escalated. However, the licensee's analyses shows that the DNBR criteria is not exceeded (no fuel failure) and shows that the RCS is not overpressurized. Therefore it does not appear that a Condition III event is reached. In fact, an inadvertent lift of a PSV is also considered as condition II event in the Byron/Braidwood UFSAR and the NRC, in the Byron SER states in NUREG-0876, Section 15.2.3, that, "The staff finds the results of these transients [opening of pressurizer safety/relief valve and actuation of emergency core cooling system] acceptable because the fuel damage limits and primary system pressure limits are not violated."

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), the EDO concluded without the presumption of PSV failure to reseal, the concerns related to event classification, event escalation, and compliance with 10 CFR 50.34(b) and General Design Criteria 15, 21, and 29 are no longer at issue.

- s. There is no evaluation of the number of pressurization cycles against the plant's limit. {Omission 7}

PM Comment – The pressurization cycles would be up to the PORV set point, because, realistically, the PORVs would lift. This could be referred to the licensee.

- t. The Licensee creates a new accident. The Licensee does not address the new accident in its no significant hazards statement. {Error 11, Omission 8}

PM Comment – The PORVs are not prevented from opening. The analysis only assumes the PORVs fail to open for the specific IOECCS analysis of overpressure. The actual frequency of occurrence of this IOECCS analysis would be the frequency of occurrence of an IOECCS, with a failure of the PORVs to lift. This is not a new accident. The event as analyzed is in the licensing basis and accepted by the NRC staff. The safety function of the PORVs and PSVs during an IOECCS event is to lift to prevent overpressurization of the RCS. GDC 21 is met for the IOECCS, since there are multiple PORVs and PSVs, a failure of a valve to perform its safety function would not prevent the safety function because another valve would lift. In its May 4, 2001, SE the NRC staff states that the EPRI tests adequately demonstrate the performance of the valves for the expected water temperature conditions and that there is reasonable assurance that the valves will adequately reseal following the spurious SI event.

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), the EDO concluded without the presumption of PSV failure to reseal, the concerns related to event classification, event escalation, and compliance with 10 CFR 50.34(b) and General Design Criteria 15, 21, and 29 are no longer at issue

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), The EDO tasked NRR to inform him of NRRs plan to reassess the underlying technical issue in NSAL-93-013, as well as RIS 2005-29 and its

proposed Revision 1. This reassessment includes the reassessment of PSV performance after water discharge

2. The Licensee employed a circular logic that failed to demonstrate that the Byron and Braidwood plant design meets all of its design requirements.

PM Comment – Based on the comments, above, it appears that the Byron and Braidwood plant design is consistent with its licensing basis as approved by the NRC staff. By memorandum dated September 15, 2016 (ADAMS ML16246A247), The EDO tasked NRR to inform him of NRRs plan to reassess the underlying technical issue in NSAL-93-013, as well as RIS 2005-29 and its proposed Revision 1. This reassessment includes the reassessment of PSV performance after water discharge and the progression of the IOECCS event described in RIS 2005-29 and its proposed Revision 1

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), the EDO concluded without the presumption of PSV failure to reseal, the concerns related to event classification, event escalation, and compliance with 10 CFR 50.34(b) and General Design Criteria 15, 21, and 29 are no longer at issue

3. The technical review staff of the NRC's Office of Nuclear Reactor Regulation (NRR) had approved the Licensee's applications for power upratings for the Byron and Braidwood plants [9] [10] [16] that claimed it had complied with a key design requirement [2] [3], which requires nuclear plants to be designed in a way that prevents AOOs from developing into more serious events. The Licensee's claim relied upon its plants' pressurizer safety valves (PSVs) to perform safety functions that are outside their design basis.

PM Comment - In its May 4, 2001, SE the NRC staff states that the EPRI tests adequately demonstrate the performance of the valves for the expected water temperature conditions and that there is reasonable assurance that the valves will adequately reseal following the spurious SI event.

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), the EDO concluded without the presumption of PSV failure to reseal, the concerns related to event classification, event escalation, and compliance with 10 CFR 50.34(b) and General Design Criteria 15, 21, and 29 are no longer at issue

PM Comment – By memorandum dated September 15, 2016 (ADAMS ML16246A247), The EDO tasked NRR to inform him of NRRs plan to reassess the underlying technical issue in NSAL-93-013, as well as RIS 2005-29 and its proposed Revision 1. This reassessment includes the reassessment of PSV performance after water discharge

4. The Licensee submitted, under Oath and Affirmation, a statement of no significant hazards, as per 10 CFR §50.92.

PM Comment – See comment under item t, above.

From: Dean, Bill
Sent: 2 Sep 2016 09:20:21 -0600
To: Vic.McCree@nrc.gov;Johnson, Michael
Cc: Holahan, Gary;Clark, Theresa;McDermott, Brian;Evans, Michele;Lubinski, John;Ross-Lee, MaryJane;Taylor, Robert
Subject: NRR Perspectives OEDO Backfit Panel Findings.docx - Sent from MaaS360
Attachments: NRR Perspectives OEDO Backfit Panel Findings.docx

Vic and Mike

Appreciate the opportunity to share with you NRR's perspective related to the appeal panel's recommendations. Look forward to discussing with you after your vacation - hope it is an enjoyable one.

NRR Perspectives OEDO Backfit Panel Findings

- NRR appreciates the panel's efforts. However, NRR believes that the panel's perspectives do not provide sufficient basis to overturn the backfit.
- NRR Concerns
 - The panel has narrowly focused its review on the water qualification question. NRR maintains that the original backfit documents numerous issues with the licensing basis for Byron and Braidwood that have not been addressed in the panel's assessment.
 - With regard to the PSV water qualification question, the panel's position is reliant on its interpretation of the 1977 Information SECY. The panel has provided select quotes from that SECY that it believes supports its position. NRR believes that when the entire SECY is reviewed it becomes clear that the SECY was simply documenting current practices in 1977, some of which were still being researched, and does not provide a "known and established standard." The staff contends that if the 1977 SECY had been intended to provide the "known and established standard" it would have been included in subsequent updates to regulations, regulatory guides, and SRPs over the following nearly 40 years. It has not.
 - In numerous places the panel quotes documents that it interprets as describing the treatment of check valves as analogous to PSVs. The panel did not find any definitive documentation that demonstrates that the agency concluded that PSVs are analogous to check valves and, as such, should be considered passive components. This appears to be the panel's judgement, not an NRC position. NRR disagrees with the panel's interpretation and has historically treated PSVs as active components, including designating them as such during license renewal. PSVs are designed to perform a specific RCS overpressure protection safety function critical to protecting one of the key defense-in-depth barriers to protect public health and safety from the release of radioactive materials. The staff believes the panel's comparison is inappropriate and establishes a very concerning precedent.
 - On page 13, the panel acknowledges the Byron/Braidwood licensing basis as categorizing the PSVs and PORVs as active components. However, the panel, given its reliance on treating PSVs akin to check valves, establishes a new and different position in its own summary when it determines these valves should be treated as passive components for the purposes of considering the single failure criterion.
 - Regarding ASME, 10 CFR 50.55a requires nuclear power plants to be initially designed and constructed IAW ASME Boiler and Pressure Vessel Code (BPVC), Section III and to be tested throughout their service life IAW ASME OM Code. These codes comprise the qualification standards for ASME Class 1 safety valves such as the pressurizer PSVs with which licensees are required to comply unless alternatives have been authorized by the staff IAW 10 CFR 50.55a.
 - The panel asserts in its summary that the valves in question were water qualified due to the licensee's reliance on them to pass water during feedline break events. The panel does not appear to acknowledge that feedline breaks are Condition IV events, similar to LOCAs, which are never expected to occur in the lifetime of the facilities and therefore, given their lower probability of occurrence, are permitted to have more significant

consequences. The EPRI testing demonstrated acceptable performance under conditions anticipated during these Condition IV events (higher temperature fluid ~ 650°F), while the EPRI test at the more likely Condition II inadvertent mass addition event conditions (lower temperature fluid ~550 °F) was terminated early due to valve chatter on opening. The summary of the EPRI testing indicated that for subcooled water conditions valve chatter and resultant valve damage was generally observed.

- Path forward
 - If the EDO supports the original backfit, NRR agrees with the panel that risk insights are important considerations in determining how reasonable assurance of compliance can be demonstrated. However, as acknowledged by the panel, consistent with RG 1.174, risk insights must include consideration of defense-in-depth and safety margins. If a PSV were to stick open or significantly leak at Bryon and Braidwood during a licensing basis Condition II event, which is anticipated to occur on an annual frequency, the licensee has not yet demonstrated adequate defense-in-depth. NRR is open to considering risk-informed licensing basis changes, or potential plant modifications, that appropriately consider all 5 elements of RG 1.174.
 - If the EDO supports the Backfit Panel's conclusion, NRR requests that the EDO allow the staff to independently assess what path forward is appropriate given the positions documented in the panel's report and EDO's decision. In particular, NRR has concerns regarding the recommendations on page 3 of the report that need to be further considered before determining what future course of action is most appropriate.

From: Banks, Eleasah
Sent: 16 Sep 2016 09:03:03 -0400
To: RidsNrrMailCenter Resource;RidsOgcMailCenter Resource;RidsNroMailCenter Resource;RidsResPmdaMail Resource;RidsResOd Resource;RidsNmssOd Resource;RidsRgn1MailCenter Resource;RidsRgn2MailCenter Resource;RidsRgn3MailCenter Resource;RidsRgn4MailCenter Resource;RidsNrrDorlLpl3-2 Resource;RidsNrrPMByron Resource;RidsNrrPMBraidwood Resource;RidsNrrDss Resource;RidsNrrDe Resource;RidsNrrDpr Resource;RidsNrrDorl Resource;Garmoe, Alex;Keene, Todd;Gody, Tony;Gendelman, Adam;Mizuno, Beth;Correia, Richard;West, Khadijah;Bailey, Marissa;Scarborough, Thomas;Spencer, Michael;Clark, Theresa
Subject: OEDO-16-00463 Nuclear Energy Institute Comments in Support of Exelon Generation Company Second-Level Backfit Appeal

Date: September 15, 2016
Memorandum To: Anthony R. Pietrangelo
From: Victor M. McCree
Subject: OEDO-16-00463 Nuclear Energy Institute Comments in Support of Exelon Generation Company Second-Level Backfit Appeal

This document is publicly available in
ADAMS

[View ADAMS P8 Properties ML16208A006](#)

[Open ADAMS P8 Package \(OEDO-16-00463 Nuclear Energy Institute Comments in Support of Exelon Generation Company Second-Level Backfit Appeal.\)](#)

From: Poole, Justin
Sent: 10 Dec 2015 14:57:55 -0500
To: Quichocho, Jessie
Cc: Krohn, Paul; Boland, Anne; Wiebe, Joel
Subject: One pager on Braidwood-Byron Backfit
Attachments: Braidwood-Byron Backfit.docx

Jessie,

Per your request, here is a one-pager on the staff's issuance of the Braidwood-Byron backfit for which Exelon recently sent an appeal letter. The backfit was issued on [October 9, 2015](#). Let us know if any further action is required.

Thanks,

*Justin C. Poole
Acting Chief
NRR/DORL/LPL3-2
U.S. Nuclear Regulatory Commission
(301)415-2048*

Braidwood-Byron Stations Backfit

Key Messages

- **Braidwood and Byron are not in compliance with Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix A, General Design Criteria (GDC) 15, "Reactor Coolant System Design," GDC 21, "Protection System Reliability and Testability," and GDC 29, "Protection Against Anticipated Operational Occurrences," 10 CFR 50.34(b), "Final Safety Analysis Report," and the plant-specific design bases showing there will be no progression of Category II events into Category III events ("prohibition of progression of Condition II events").**
- **The inadvertent operation of emergency core cooling system (IOECCS) analysis that is the center of the non-compliance was previously accepted by the NRC staff in the Issuance of Amendments regarding the Increase in Reactor Power, Byron Station Units 1 and 2, and Braidwood Station, Units 1 and 2," May 4, 2001 (ADAMS Accession No. ML011420274).**
- **The staff determined that the current conclusion and position constitutes backfitting under 10 CFR 50.109(a)(1), however, it falls within the compliance exception of 10 CFR, Section 50.109(a)(4)(i). Accordingly, the staff did not prepared a backfit analysis to support the Safety Evaluation (SE).**

Facts

- The UFSAR IOECCS analysis predicts water relief through a valve that is not qualified for water relief. Therefore, the staff concludes that the UFSAR does not contain analyses that demonstrate the structures, systems, and components will meet the design criteria for Condition II faults as stated in the Braidwood and Byron UFSAR.
- Because the analyses in UFSAR, Chapters 15.5.1, 15.5.2, and 15.6.1, do not show that Condition II faults will not cause a more serious fault, the staff concludes that these UFSAR analyses do not demonstrate compliance with GDCs 15, 21, and 29.
- The NRC staffs conclusions with respect to noncompliance with GDCs 15, 21, and 29, 10 CFR 50.34(b) and UFSAR provisions with respect to prohibition of progression of Condition II events, differs from a previous NRC position on the acceptability of the Braidwood and Byron design bases. The staff's earlier position was documented in the SE for an increase in reactor power enclosed with a letter dated May 4, 2001 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML011420274). Therefore, the staff has determined that the current conclusion and position constitutes backfitting under 10 CFR 50.109(a)(1).
- The staff determined that the backfitting falls within the compliance exception in 10 CFR, Section 50.109(a)(4)(i), because the staff's interpretation, guidance, and general application (as opposed to the specific NRC approval for Byron and Braidwood) of GDCs 15, 21, and 29, 10 CFR, Section 50.34(b), have not changed, with respect to the unacceptability of the specific Condition II events at the Braidwood and Byron plants evolving to Condition III events. In addition, the staff's interpretation of these plants' UFSAR provisions with respect to prohibition of progression of Condition II events has not changed. Consequently, a backfit analysis is not required to support the staff's determinations, and the staff has not prepared a backfit analysis to support the SE.

From: Whitman, Jennifer
Sent: 15 Sep 2016 15:39:56 +0000
To: Alley, David
Subject: Panel Findings

Backfit Appeal Review Panel Findings (Byron and Braidwood)

That is a link to the package with the memo and the enclosure and some other related documents.

ADAMS Accession Nos.: Package ML16236A198

Memorandum ML16236A202; Enclosure ML16236A208

Jennifer Whitman

Reactor Systems Engineer

NRR/DSS/SRXB

Office: O10 " D15

Phone: (301) 415-3253

These documents are publicly available in ADAMS

From: Clark, Theresa
Sent: 16 Sep 2016 08:57:39 -0400
To: Roberts, Ashley;Valentine, Nicholee
Cc: Wiebe, Joel;Keene, Todd;Garmoe, Alex;Burnell, Scott;Abraham, Susan
Subject: pre-request - cost data for Exelon backfit

Ashley/Nikki,

We're working with OPA on some public communications regarding the Exelon backfit appeal decision by the EDO this week. They were hoping to have in their back pocket any information we had on the cost of the agency's activities related to this backfit, the NRR appeal, and the EDO appeal, as well as if they were fee billable.

I think the following are the relevant CACs, though the PMs may know better. I recognize that it will not capture everyone's hours, as managers (and I!) used different CACs, but it should include most staff time.

- **MF3206/7/8/9**, Backfit – licensing basis relis upon relief of water through the pressurizer safety valves for mitigation of...
- **MF7231/2/3/4**, Review of Appeal of Imposition of Backfit Regarding a Condition II Event that Could Cause a More Serious Event (non fee billable)
- **MF8035**, EDO Review of Appeal of Imposition of Backfit Regarding a Condition II Event that Could Cause a More Serious Event

I don't think there is a huge rush to get the information but if you could get started pulling it together that would probably make life easier in the future.

Thanks so much!

--

Theresa Valentine Clark
Executive Technical Assistant (Reactors)
U.S. Nuclear Regulatory Commission
Theresa.Clark@nrc.gov | 301-415-4048 | O-16E22

From: [Wiebe, Joel](#)
To: [Case, Michael](#); [Banic, Merrilee](#)
Cc: [Billerbeck, John](#); [Sun, Summer](#); [Figueroa Toledo, Gladys](#); [Kirkwood, Sara](#); [Drzewiecki, Timothy](#)
Subject: Proposed Script for February 1, 2017, Meeting with Sam Miranda Regarding his November 15, 2016 Petition
Date: Monday, January 23, 2017 1:21:42 PM
Attachments: [Script for 2.206 PRB Meeting with Sam Miranda on February 1, 2017.docx](#)

Let me know if you have comments or suggestions by Thursday, January 26th.

February 1, 2017
Petition Review Board Discussion With Petitioner
Braidwood and Byron Stations
Samuel Miranda, 2.206 Petition OEDO-16-00783

Agenda

Purpose:

1. For the petitioner, **Samuel Miranda**, to address the Petition Review Board (PRB) for the petition on dated November 15, 2016, for **Braidwood and Byron Stations**

- A. Welcome and Introductions (Petition Manager)

- B. PRB Chairman's Introduction (PRB Chair)

- C. Petitioner's Presentation

- D. PRB Chairman's Closing Remarks

Talking Points

- A. Welcome and Introductions (PM)
 - Welcome to you all. My name is Joel Wiebe and I am the NRC Petition Manager for this petition. We are here today to allow the petitioner, Samuel Miranda, to address the Petition Review Board, regarding the 2.206 petition dated November 15, 2016.

 - As part of the Petition Review Board's (or PRB's) review of this petition, Mr. Miranda has requested this opportunity to address the PRB.

 - This meeting is scheduled from 1-3 pm (Eastern Time). The meeting is being recorded by the NRC Operations Center and will be transcribed by a court reporter. The transcript will become a supplement to the petition. The transcript will also be made publicly available.

 - I'd like to open this meeting with introductions. The PRB Chair is Michael Case. Michael is the Director of the Division of Engineering in the Office of Nuclear Regulatory Research. I'd like the rest of the Petition Review Board to introduce themselves. As we go around the room, please be sure to clearly state your name, your position, and the office that you work for within the NRC for the record. I'll start off [PM starts off the introductions].

 - We've completed introductions of NRC staff at the NRC headquarters.

- Are there any NRC participants from Headquarters on the phone?
 - Are there any NRC participants from the Regional Office on the phone? (Regional participants introduce themselves)
 - Is the court reporter on the line?
 - If there are any licensee personnel on the line, I would like each of you to email your name, position, and organization. And likewise for the public. It is not required for members of the public to introduce themselves but if there are any on the phone that wish to do so, email me your name and organization, if applicable
 - My email is Joel.Wiebe@nrc.gov.
- Mr. Miranda, would you please introduce yourself for the record.
 - I'd like to emphasize that we each need to speak clearly and loudly to make sure that the court reporter can accurately transcribe this meeting. If you do have something that you would like to say, please first state your name for the record.
 - We also ask you to minimize any side conversations during the meeting. We will try to have only one speaker at a time.
 - For those dialing into the meeting, please remember to mute your phones to minimize any background noise or distractions. If you do not have a "mute" button, this can be done by pressing the keys * 6. To unmute press the *6 keys again.
 - At this time, I'll turn it over to the PRB Chairman ...

B. Opening Remarks For PRB chair

- Welcome to this meeting regarding the 2.206 petition submitted by Mr. Miranda.
- I'd like to first share some background on our process:

Section 2.206 of Title 10 of the Code of Federal Regulations describes the petition process – the primary mechanism for the public to request enforcement action by the NRC in a public process. This process permits anyone to petition NRC to take enforcement-type action related to NRC licensees or licensed activities. Depending on the results of its evaluation, NRC could modify, suspend or revoke an NRC-issued license or take any other appropriate enforcement action to resolve a problem. The NRC staff's guidance for the disposition of 2.206 petition requests is in Management Directive 8.11, which is publicly available.

- The purpose of today's meeting is to give the petitioner an opportunity to provide any additional explanation or support for the petition before the Petition Review Board's initial consideration and recommendation.
 - a. This meeting is not a hearing, nor is it an opportunity for the petitioner to question or examine the PRB on the merits of the issues presented in the petition request.
 - b. No decisions regarding the merits of this petition will be made at this meeting.
 - c. Following this meeting, the Petition Review Board will conduct its internal deliberations. The outcome of this internal meeting will be discussed with the petitioner.
 - d. The Petition Review Board consists of a Chairman, usually a manager at the senior executive service level at the NRC. It has a Petition Manager and a PRB Coordinator. Other members of the Board are determined by the NRC staff based on the content of the information in the petition request. The members have already introduced themselves.
 - f. As described in our process, the NRC staff may ask clarifying questions in order to better understand the petitioner's presentation and to reach a reasoned decision whether to accept or reject the petitioner's requests for review under the 2.206 process. Also, as described in our process, the licensee has been invited to participate in today's meeting to ensure that it understands the concerns about their facility or activities. While the licensees may also ask questions to clarify the issues raised by the petitioner, I want to stress that the licensees are not a part of the PRB's decision-making process.
 - g. Licensees will have an opportunity to ask the petitioner questions after his presentation.
- I would like to summarize the scope of the petition under consideration and the NRC activities to date.

The petition identifies omitted or mistaken points regarding licensee commitments to NRC guidance and related standards associated with the Inadvertant Operation of Emergency Core Cooling System during Power Operation event and the nonj-escalation guidance in the following areas:

- Unnecessary overpressure analysis
- Unnecessary departure from nucleate boiling analysis
- Missing non-escalation case analysis

- Non-conservative assumptions
- Missing discussion of power operated relief valve response
- Missing justification for the use of pressurizer safety valves, in lieu of power operated relief valves.
- Invalid comparison between two dissimilar events (Inadvertant opening of pressurizer safety or relief valve and inadvertant operation of emergency core cooling system during power operation
- Emergency core cooling system flow will not match pressurizer safety valve water relief rate.
- Lack of vendor/contractor oversight
- Emergency core cooling system is not a normal makeup system
- Missing valve test results needed to qualify the pressurizer safety valves for water relief.
- No discussion of design change process.
- Failure to meet General Design Criteria 21
- No evaluation of potential damage to the pressurizer safety valves.
- No evaluation of the number of pressurization cycles incurred.
- A new accident is created without addressing it in the no significant hazards statement.
- Safety significance.

As a reminder for the phone participants, please identify yourself if you make any remarks, as this will help us in the preparation of the meeting transcript that will be made publicly available. Since this is a public meeting, I would like to remind the PRB members, the licensees, the petitioner, and other meeting participants, of the need to refrain from discussing any NRC sensitive or proprietary information during today's public meeting.

Mr. Miranda, I'll turn it over to you to allow you the opportunity to provide any information you believe the PRB should consider as part of this petition.

C. Petitioner's Presentation

D. PRB Chair Closing Remarks

- At this time, does the staff here at headquarters have any questions for Mr. Miranda?
- Do any headquarters staff on the phone have any questions for Mr. Miranda?
- Do any staff from the Region have any questions?
- Does the licensee have any questions?
- Does any licensee of a nuclear power plant not currently operating have any questions?
- (IF THERE ARE ANY MEMBERS OF THE PUBLIC) Before I conclude the meeting, members of the public may provide comments regarding the petition and ask

questions about the 2.206 petition process. However, as stated at the opening, the purpose of this meeting is not to provide an opportunity for the petitioner or the public to question or examine the PRB regarding the merits of the petition request.

- Mr. Miranda, thank you for taking time to provide the NRC staff with clarifying information on the petition you've submitted.
- Before we close, does the court reporter need any additional information for the meeting transcript?
- With that, this meeting is concluded, and we will be terminating the phone connection.

From: Wiebe, Joel
Sent: 7 Mar 2016 13:55:02 +0000
To: Jandovitz, John;Draper, Jason;McGhee, James
(James.McGhee@nrc.gov);Benjamin, Jamie;Betancourt, Diana
Subject: Public Meeting to Discuss Exelon Generation Company, LLCs Appeal of Compliance Backfit

Here is the link to the meeting notice and the ML#s for the handouts. I followed the trail for the conference line and passcode and it says to contact your old buddy Alex Garmoe. I left Alex a voice mail. When I get the conference line information, I will forward it on to you.

Related Documents

[ML16062A422](#) - Exelon Meeting Slides for March 7, 2016 Public Meeting to Discuss Backfit Appeal. These slides are publicly available in ADAMS.

[ML16063A158](#) - 03/07/2016 Public Meeting to Discuss Exelon Generation Company, LLCs Appeal of Compliance Backfit Affecting Braidwood and Byron Generating Stations The meeting notice and agenda are publicly available in ADAMS.

[View ADAMS P8 Properties ML16047A413](#)

[Open ADAMS P8 Document \(03/07/2016 Public Meeting to Discuss Exelon Generation Company, LLCs Appeal of Compliance Backfit Affecting Braidwood and Byron Generating Stations\)](#)

This meeting notice had been publicly available until the meeting room was changed, so a new notice was issued (ML16063A158) to replace it.

From: [Garmoe, Alex](#)
To: [Desterle, Eric](#); [Whitman, Jennifer](#); [Stuchell, Sheldon](#); [Alley, David](#); [Billerbeck, John](#); [Farnan, Michael](#)
Subject: Question: Backfit Response Plan
Date: Tuesday, November 29, 2016 4:19:48 PM
Attachments: [Response Memo to EDO Rev 5 Internal Detailed Plan.docx](#)
[Response Memo to EDO Rev 5.docx](#)

All,

We've been developing the response to the EDO via a memorandum that we always knew would be publicly available and a more detailed milestone plan that initially was thought to perhaps remain non-public. Sheldon and I were discussing this non-public detailed milestone plan and wondering if there really is a basis or reason to keep it non-public. I would like to know your thoughts on whether we should make the more detailed plan public as a standalone document or attached it to the memo.

Also, I recalled feedback from Rob Taylor that we should inform the EDO that we'd be involve with the ASME code committee as we move forward with an understanding of code requirements. I added language to the third milestone to reflect this, as follows:

*Determine ASME code requirements for qualification and testing of water-qualified valves and applicable NRC requirements or positions regarding such qualification and testing. **Determination to be informed by interaction with ASME code committee.***

Let me know if the added language concerns you.

Thanks,



Alexander D. Garmoe

Senior Project Manager

Generic Communications Branch (PGCB)
Division of Policy and Rulemaking (DPR)
Office of Nuclear Reactor Regulation (NRR)
Alex.Garmoe@nrc.gov | 301-415-3814

Internal Detailed Plan to Address NSAL-93-013 Underlying Technical Issue

Implementation Plan Details	Target Date
Define underlying technical issues in NSAL	Complete
<p>Identify relevant operating experience, assess the extent of condition across the fleet, and determine if the underlying technical issue has safety significance</p> <ul style="list-style-type: none"> ○ Work with DIRS/IOEB to identify operating experience related to IOECCS occurrences and relevant data on PSV performance ○ DSS/SRXB to lead identification of the potentially affected plant designs and licensees, what NRC has previously accepted with respect to PSV qualification, and determination of whether PSV application appears appropriate for these licensees ○ Determine whether closure of GI-70 remains acceptable and/or impacts the staff position on the technical issue in NSAL-93-013 (from TGody Memo to NRR Backfit Panel (ML16081A405)) ○ Document this outcome in a white paper from DSS/SRXB to DSS management 	3/31/2017
<p>Determine ASME code requirements for qualification and testing of water-qualified valves and applicable NRC requirements or positions regarding such qualification and testing. Determination to be informed by interaction with ASME code committee.</p> <ul style="list-style-type: none"> ○ Identify applicable ASME code language ○ Identify applicable NRC requirements and what specifically is required ○ Identify any gaps or lack of clarity in requirements 	3/31/2017
<p>Develop appropriate message to be communicated regarding the technical issue, regulatory requirements, and status of the fleet</p> <ul style="list-style-type: none"> ○ Is there a concern with PSV application and methods of qualification? ○ What is the extent of condition across the fleet? ○ Is long term operation of PSVs with water and steam technically feasible? 	4/30/2017

<ul style="list-style-type: none"> ○ What has been previously accepted for PSV qualification by NRC? ○ What are currently acceptable methods of PSV qualification? ○ What are ASME OM code requirements for testing water-qualified valves? 	
<p>Determine the appropriate process for disposition/communication of staff position. Consider whether any aspects of the issue should be included in the Generic Issues Program.</p> <ul style="list-style-type: none"> ○ Consider whether GI-70 should be re-assessed or updated (from TGody Memo to NRR Backfit Panel (ML16081A405)) ○ Ensure coordination and review by OGC and CRGR 	5/19/2017
<p>Implement the selected process in accordance with Agency guidance</p>	TBD based on selected process
<p>Consider plant-specific actions to address concerns identified in extent of condition review</p>	Following completion of communication of the staff's position

Date

MEMORANDUM TO: Victor M. McCree
Executive Director for Operations

FROM: William M. Dean, Director
Office of Nuclear Reactor Regulation

SUBJECT: RESPONSE TO REQUEST FOR A PLAN TO ASSESS THE
TREATMENT OF THE UNDERLYING TECHNICAL ISSUE IN
NSAL-93-013 AND THE POSITIONS IN RIS 2005-29 AND
PROPOSED REVISION 1.

In a memorandum dated September 15, 2016 (Agencywide Documents Access and Management System (ADAMS) ML16246A247), you communicated the results of your review of a backfit appeal by Exelon Generation Co., LLC. The backfit was initially imposed by the staff, using the compliance exception to the backfit rule, on October 9, 2015 (ADAMS ML14225A871). After undergoing the backfit appeal process with the Office of Nuclear Reactor Regulation (NRR), in which NRR upheld imposition of the backfit, Exelon appealed the NRR decision to you in a letter dated June 2, 2016 (ADAMS ML16154A254). The September 15 memorandum referred to the report of a Backfit Appeal Review Panel, which you had designated to review the June 2 appeal.

As noted in the September 15 memorandum, the Backfit Appeal Review Panel determined that use of the ASME BPV code to demonstrate qualification of PSVs for water relief, the presumption of a PSV failing to reseal following water relief, and application of the single failure criterion were not known and established staff positions at the time the licensing actions in question were issued. In light of this determination, the memorandum included two issues identified by the Backfit Appeal Review Panel as warranting further NRC review. As stated in the memorandum:

The Panel's report also identifies two issues that warrant further NRC consideration. The report reveals the need to assess the treatment of the underlying technical issue described in the 1993 Westinghouse Nuclear Safety Advisory Letter (NSAL-93-013) on PSV performance after water discharge at pressurized-water reactors. In addition, given the decision communicated herein, the positions included in RIS 2005-29, as well as its proposed Revision 1, should be (re)assessed through the appropriate generic process to ensure they receive appropriate backfit consideration. You are requested to inform me within 120 days of your plan to respond to these issues.

Staff from NRR have reviewed the September 15 memorandum and supporting documentation. As requested, a plan has been developed, as described herein and in the Enclosure to this memorandum, to assess the underlying technical issue described in Westinghouse NSAL-93-013 and the positions included in RIS 2005-029 and the proposed revision.

The underlying technical issue associated with NSAL-93-013 (Sheet 4 of 5) for the inadvertent operation of ECCS event (IOECCS) is, "the PSRVs [Pressurizer Safety Relief Valves] ... must be capable of closing after release of subcooled water." NRR staff will re-evaluate its position on this technical issue and document what constitutes acceptable qualification of PSVs for liquid discharge.

This technical issue and the licensing implications were discussed in the current version of RIS 2005-29, which was published on December 14, 2005. This RIS was reviewed by the Office of the General Counsel (OGC) and the Committee to Review Generic Requirements (CRGR), who determined that the RIS did not represent a backfit. When the staff imposed the compliance backfit on Braidwood and Byron plants in October 2015, an effort began to revise RIS 2005-29 to incorporate information from the plant-specific backfit. Since Exelon's appeal of the backfit has been granted, this proposed revision will be placed on hold to allow the staff to revisit the NSAL-93-013 technical issue in question. Because at least some sites rely on power operated relief valve operation to prevent water relief from PSVs, the staff will also review the closure of Generic Issue 70, "Power-Operated Relief Valve and Block Valve Reliability." The staff will then identify an appropriate process for dispositioning and communicating the technical issue and will implement that process in accordance with Agency guidance. The staff will also determine how to address the position stated in the current publicly available version of RIS 2005-29. This could involve a revision to the RIS to further clarify the staff's position or implementation of another agency process should the staff (with the assistance of OGC and CRGR) determine that its position is new or different.

Once the staff has revisited its position on the underlying technical issue and clearly articulated its position, plant-specific actions can be evaluated and implemented, if necessary. Regardless of the process used, the staff will ensure its position is reviewed by OGC and CRGR to ensure appropriate backfit consideration.

Enclosure:
As stated

DISTRIBUTION:

PUBLIC	RidsNrrDorLp3-2	AGendelman, OGC
RidsNrrMailCenter	RidsNrrPMByron	GMizuno, OGC
RidsOgcMailCenter	RidsNrrPMBraidwood	MThaggard, RES
RidsResMailCenter	RidsNrrDss	KSWest, NSIR
RidsNroMailCenter	RidsNrrDe	MBailey, NSIR
RidsNmssMailCenter	RidsNrrDpr	TScarborough, NRO
RidsRgn1MailCenter	RidsNrrDorl	MASpencer, OGC
RidsRgn2MailCenter	AGarmoe, NRR	TClark, OEDO
RidsRgn3MailCenter	AGody, Region II	RLorson, Region I
RidsRgn4MailCenter	KOBrien, Region III	TVegel, Region IV

OFFICE	NRR/DPR/PGCB/PM	NRR/DPR/PGCB/LA	NRR/DSS/SRXB	NRR/DE/EPNB	NRR/DSS
NAME	AGarmoe		EOesterle	DAlley	TMcGinty
DATE					
OFFICE	NRR/DE	NRR/DD	NRR/DD	NRR/D	
NAME	JLubinski	MEvans	BMcDermott	WDean	
DATE					

Milestones for Addressing the Underlying Technical Issue in NSAL-93-013

Implementation Plan Details	Target Date
Define underlying technical issues in NSAL	Complete
Identify relevant operating experience, assess the extent of condition across the fleet, and determine if the underlying technical issue has safety significance	3/31/2017
Determine ASME code requirements for qualification and testing of water-qualified valves and applicable NRC requirements or positions regarding such qualification and testing. Determination to be informed by interaction with ASME code committee.	3/31/2017
Develop appropriate message to be communicated regarding the technical issue, regulatory requirements, and status of the fleet	4/30/2017
Determine the appropriate process for disposition/communication of staff position. Consider whether any aspects of the issue should be included in the Generic Issues Program and whether GI-70 should be re-assessed or updated.	5/19/2017
Implement the selected process in accordance with Agency guidance	TBD based on selected process
Consider plant-specific actions to address concerns identified in extent of condition review	Following completion of communication of the staff's position

From: Garmoe, Alex
Sent: 28 Mar 2016 09:42:15 -0400
To: Wiebe, Joel
Cc: Brown, Eva
Subject: Quick Backfit Question

Joel/Eva,

In reading the October 9, 2015, issuance of a backfit to Braidwood and Byron (ML14225A871) I noticed the licensee was given 60 days to appeal the backfit. When Region II issued a backfit to Hatch in 2011 (ML111450793) they gave the licensee 30 days to appeal the backfit. When Region II rejected Hatch's backfit appeal back in 2011 (ML112730194) they gave the licensee 30 days to appeal the decision to the EDO. None of the letters point to a specific section in MD 8.4 or NUREG-1409 that stated how long a licensee should be given to appeal a decision, nor did I find anything when I searched the documents.

Since I am currently drafting an appeal response letter to the licensee, in the event the appeal is denied, how long does the licensee have to appeal the decision to the EDO? My gut would say 30 days to be consistent with Hatch but I think we should be able to point somewhere to back up that number.

Thanks for any thoughts!



Alexander D. Garmoe

Senior Project Manager

Generic Communications Branch (PGCB)
Division of Policy and Rulemaking (DPR)
Office of Nuclear Reactor Regulation (NRR)
Alex.Garmoe@nrc.gov | 301-415-3814

Both ML14225A871 and
ML111450793 are publicly
available in ADAMS

From: Krohn, Paul
Sent: 10 Dec 2015 14:23:49 -0500
To: Poole, Justin
Cc: Wiebe, Joel; Boland, Anne; Wilson, George
Subject: RE: ACTION: Review of Braidwood-Byron Backfit one-pager
Attachments: Braidwood-Byron Backfit - krohn comments.docx

Justin and Joel,

Thanks for preparing this one-pager for the (EDO) requested thru Jessie regarding the Byron/Braidwood back fit issue. Anne and George – this involves the UFSAR which allowed water relief thru a relief valve that is not qualified for passing water during an inadvertent operating of ECCS scenario).

Overall, very well written one-pager. See attached for my one comment on adding a key message regarding backfit. Namely, that while this issue is being treated as a backfit under 50.109, it is compliance backfit and therefore an analysis to support the SE was not prepared).

Paul

From: Poole, Justin
Sent: Thursday, December 10, 2015 8:42 AM
To: Krohn, Paul <Paul.Krohn@nrc.gov>
Cc: Wiebe, Joel <Joel.Wiebe@nrc.gov>
Subject: ACTION: Review of Braidwood-Byron Backfit one-pager
Importance: High

Paul,

In the workload meeting yesterday we got on the topic of the Exelon's letter requesting an appeal of our backfit determination. I mentioned that the EDO's office (through ETA - Jessie) had requested a one-pager on the topic. Attached is the one-pager Joel (PM for Braidwood/Byron) has put together. Please review and provide any comments so we may send this up by COB today. If you would like a quick brief, Joel (and I) can stop by. Thanks

Justin

Braidwood-Byron Stations Backfit

Key Messages

- Braidwood and Byron are not in compliance with Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix A, **General Design Criteria** (GDC) 15, "Reactor Coolant System Design," GDC 21, "Protection System Reliability and Testability," and GDC 29, "Protection Against Anticipated Operational Occurrences," 10 CFR 50.34(b), "Final Safety Analysis Report," and the plant-specific design bases showing there will be no progression of Category II events into Category III events ("prohibition of progression of Condition II events").
- The inadvertent operation of emergency core cooling system (IOECCS) analysis that is the center of the non-compliance was previously accepted by the NRC staff in the Issuance of Amendments regarding the Increase in Reactor Power, Byron Station Units 1 and 2, and Braidwood Station, Units 1 and 2," May 4, 2001 (ADAMS Accession No. ML011420274).
- The staff has determined that the current conclusion and position constitutes backfitting under 10 CFR 50.109(a)(1), however, it falls within the compliance exception of 10 CFR, Section 50.109(a)(4)(i). Accordingly, the staff has not prepared a backfit analysis to support the Safety Evaluation (SE).

Facts

- The UFSAR IOECCS analysis predicts water relief through a valve that is not qualified for water relief. Therefore, the staff concludes that the UFSAR does not contain analyses that demonstrate the structures, systems, and components will meet the design criteria for Condition II faults as stated in the Braidwood and Byron UFSAR.
- Because the analyses in UFSAR, Chapters 15.5.1, 15.5.2, and 15.6.1, do not show that Condition II faults will not cause a more serious fault, the staff concludes that these UFSAR analyses do not demonstrate compliance with GDCs 15, 21, and 29.
- The NRC staffs conclusions with respect to noncompliance with GDCs 15, 21, and 29, 10 CFR 50.34(b) and UFSAR provisions with respect to prohibition of progression of Condition II events, differs from a previous NRC position on the acceptability of the Braidwood and Byron design bases. The staff's earlier position was documented in the SE for an increase in reactor power enclosed with a letter dated May 4, 2001 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML011420274). Therefore, the staff has determined that the current conclusion and position constitutes backfitting under 10 CFR 50.109(a)(1).
- The staff determined that the backfitting falls within the compliance exception in 10 CFR, Section 50.109(a)(4)(i), because the staff's interpretation, guidance, and general application (as opposed to the specific NRC approval for Byron and Braidwood) of GDCs 15, 21, and 29, 10 CFR, Section 50.34(b), have not changed, with respect to the unacceptability of the specific Condition II events at the Braidwood and Byron plants evolving to Condition III events. In addition, the staff's interpretation of these plants' UFSAR provisions with respect to prohibition of progression of Condition II events has not changed. Consequently, a backfit analysis is not required to support the staff's determinations, and the staff has not prepared a backfit analysis to support the SE.

From: Wiebe, Joel
Sent: 21 Dec 2015 20:13:34 +0000
To: Garmoe, Alex
Cc: Poole, Justin
Subject: RE: ACTION: Braidwood/Byron Backfit
Attachments: Backfit Review Panel Charter.docx

In general, the questions reflect the pertinent aspects of Exelon's basis for appeal.

I would eliminate the use of the term "explain." It gives me the impression that the backfit review panel is required to explain their actions. I think the panel should establish an independent position on the issues involved in the questions. One suggestion would be to use the term "describe" or "determine." Another suggestion would be to just ask the question as the Hatch backfit did. Just my opinion.

The other comment I have is that we are asking the panel to recommend whether or not a backfit is necessary. I don't think that is out of line, but I don't think Exelon objected to the necessity of the backfit. If we really want the panel to do this, we should make sure this is a conscious decision and recognize it is beyond the appeal basis. If the panel determines that we should not have used the compliance exception, then it appears that the appropriate path would be to refer the action back to the staff to perform the appropriate backfit analysis, which would make the determination whether or not the backfit is justified.

Joel

From: Garmoe, Alex
Sent: Friday, December 18, 2015 1:41 PM
To: Wiebe, Joel
Subject: ACTION: Braidwood/Byron Backfit

Joel,

I have been working on the NRC's actions to take in response to the Braidwood/Byron backfit appeal that was received on December 8. One of the tasks is to create a backfit review panel charter, which I have drafted and attached. The individuals listed in the charter have been discussed with Bill Dean and have expressed a willingness to participate on the panel. This is an initial draft that reflects my efforts to get up to speed on this issue. I used the [backfit review panel charter](#) from the 2011 Hatch backfit appeal as guidance. At your earliest convenience, could you review what I drafted and suggest edits as needed? In particular, please review the questions asked of the panel to make sure they make sense and cover the issues in the licensee's appeal. LIC-202 prescribes a pretty quick timeline for all of this so I am hoping to move this document forward on Monday 12/21.

Thanks for any assistance you can provide!

From: Garmoe, Alex
Sent: 22 Dec 2015 08:24:08 -0500
To: Poole, Justin
Cc: Beaulieu, David; Stuchell, Sheldon; Wiebe, Joel
Subject: RE: ACTION: Concurrence Requested

Thanks!

From: Poole, Justin
Sent: Tuesday, December 22, 2015 8:16 AM
To: Garmoe, Alex <Alex.Garmoe@nrc.gov>
Cc: Beaulieu, David <David.Beaulieu@nrc.gov>; Stuchell, Sheldon <Sheldon.Stuchell@nrc.gov>; Wiebe, Joel <Joel.Wiebe@nrc.gov>
Subject: RE: ACTION: Concurrence Requested

Alex,

I concur.

Justin

From: Wiebe, Joel
Sent: Monday, December 21, 2015 5:37 PM
To: Poole, Justin <Justin.Poole@nrc.gov>
Cc: Beaulieu, David <David.Beaulieu@nrc.gov>; Stuchell, Sheldon <Sheldon.Stuchell@nrc.gov>; Garmoe, Alex <Alex.Garmoe@nrc.gov>
Subject: Re: ACTION: Concurrence Requested

Justin,

I have seen this and agree with this charter.

Joel

From: Garmoe, Alex
Sent: Monday, December 21, 2015 05:24 PM
To: Poole, Justin; Stuchell, Sheldon
Cc: Beaulieu, David; Wiebe, Joel
Subject: ACTION: Concurrence Requested

Sheldon and Justin,

Your review and concurrence is requested on the draft Charter for the Braidwood/Byron Backfit Review Panel. Because of the short timeline for review of the backfit appeal prescribed in LIC-202, your concurrence is requested as soon as practical and by **Wednesday, December 23**. Please ensure you reply to both myself and Dave Beaulieu since we will be sharing project management duties over Christmas and New Year's weeks. The link below to ML15355A081 is for the draft Charter. To aid in your review, the second link below to ML15355A083 is for the

ADAMS package with all associated B/B backfit appeal documents, which includes the initial backfit issuance and the licensee's appeal letter.

[View ADAMS P8 Properties ML15355A081](#)

[Open ADAMS P8 Document \(Backfit Review Panel Charter Regarding December 8, 2015 Exelon Appeal of Imposed Backfit Affecting Braidwood and Byron Stations\)](#)

Package: [ML15355A083](#)

Please don't hesitate to contact me with any questions. Thanks!



Alexander D. Garmoe

Senior Project Manager

Generic Communications Branch (PGCB)
Division of Policy and Rulemaking (DPR)
Office of Nuclear Reactor Regulation (NRR)
Alex.Garmoe@nrc.gov | 301-415-3814

January 12, 2016

MEMORANDUM TO: Marissa G. Bailey, Acting Director
Division of Engineering
Office of Nuclear Reactor Regulation

Anthony T. Gody, Jr, Director
Division of Reactor Safety
Region II Office

Adam S. Gendelman, Acting Deputy Director
Reactor and Materials Rulemaking
Office of the General Counsel

FROM: William M. Dean, Director /ra/
Office of Nuclear Reactor Regulation

SUBJECT CHARTER FOR BACKFIT REVIEW PANEL ON EXELON APPEAL OF
BACKFIT AFFECTING BRAIDWOOD AND BYRON STATIONS
REGARDING COMPLIANCE WITH 10 CFR 50.34(b), GDC 15, GDC 21,
GDC 29, AND THE LICENSING BASIS

In a letter dated December 8, 2015, Exelon Generation Company, LLC (EGC) appealed the U.S. Nuclear Regulatory Commission (NRC) staff's (staff) imposition of a compliance backfit at the Braidwood and Byron Stations. The NRC action imposing the compliance backfit was set forth in an October 9, 2015, letter, which transmitted the results of a staff review of licensing basis documents for the Braidwood and Byron Stations. The staff determined that Braidwood and Byron Stations were not in compliance with General Design Criteria (GDC) 15, GDC 21, GDC 29, Title 10 of the Code of *Federal Regulations* (10 CFR) 50.34(b), and the plant-specific design bases. The staff acknowledged that the imposition was backfitting because the staff imposition differed from a previous staff position documented in a 2001 power uprate safety evaluation. However, the staff determined that the backfitting was justified under the compliance exception in 10 CFR 50.109(a)(4)(i). On December 8, 2015, the licensee appealed the staff's decision in a letter to the Director, Office of Nuclear Reactor Regulation, which stated that the compliance backfit exception is not applicable, and the NRC must conduct a backfit analysis.

The process by which the NRC will review and respond to the appeal is documented in Management Directive Handbook 8.4, "Management of Facility-Specific Backfitting and Information Collection," section III.A, "Facility-specific Backfits," as implemented by Office of

CONTACT: Alexander D. Garmoe, NRR/DPR
301-415-3814

Nuclear Reactor Regulation Office Instruction LIC-202, Revision 2, "Procedures for Managing Plant-Specific Backfits and 50.54(f) Information Requests," section IV.A, "Non-Adjudicatory Appeal Process."

In accordance with section IV.A of LIC-202, and after consultation with your management, I am designating Marissa Bailey as Chairman of the Backfit Review Panel, and Anthony Gody and Adam Gendelman as members of the Backfit Review Panel. The purpose of the panel is to review EGC's appeal of the NRC staff's determination that a backfit is necessary at the Braidwood and Byron Stations, and the staff's application of the compliance backfit exception.

The panel is chartered with providing a recommendation to the Director, Office of Nuclear Reactor Regulation of whether a backfit is necessary at Braidwood and Byron and whether the staff's application of the compliance backfit exception is in accordance with § 50.109(a)(4)(i) and is otherwise appropriate. To arrive at its recommendation, the panel should review the October 9, 2015, backfit imposition letter and enclosed safety evaluation; the December 8, 2015, appeal to the Director, Office of Nuclear Reactor Regulation; and any relevant supporting information including the 2001 and 2004 safety evaluations referenced in the appeal. In conducting its review, the panel may also seek staff support.

The panel should complete its review and provide its recommendation to the Director, Office of Nuclear Reactor Regulation within 3 weeks following an associated public meeting with EGC, or by February 5, 2016, if a public meeting is declined by the licensee.

Nuclear Reactor Regulation Office Instruction LIC-202, Revision 2, "Procedures for Managing Plant-Specific Plant-Specific Backfits and 50.54(f) Information Requests," section IV.A, "Non-Adjudicatory Appeal Process."

In accordance with section IV.A of LIC-202, and after consultation with your management, I am designating Marissa Bailey as Chairman of the Backfit Review Panel, and Anthony Gody and Adam Gendelman as members of the Backfit Review Panel. The purpose of the panel is to review EGC's appeal of the NRC staff's determination that a backfit is necessary at the Braidwood and Byron Stations, and the staff's application of the compliance backfit exception.

The panel is chartered with providing a recommendation to the Director, Office of Nuclear Reactor Regulation of whether a backfit is necessary at Braidwood and Byron and whether the staff's application of the compliance backfit exception is in accordance with § 50.109(a)(4)(i) and is otherwise appropriate. To arrive at its recommendation, the panel should review the October 9, 2015, backfit imposition letter and enclosed safety evaluation; the December 8, 2015, appeal to the Director, Office of Nuclear Reactor Regulation; and any relevant supporting information including the 2001 and 2004 safety evaluations referenced in the appeal. In conducting its review, the panel may also seek staff support.

The panel should complete its review and provide its recommendation to the Director, Office of Nuclear Reactor Regulation within 3 weeks following an associated public meeting with EGC, or by February 5, 2016, if a public meeting is declined by the licensee.

DISTRIBUTION:

MBailey, NRR	MSpencer, OGC	RidsNrrDpr	RidsNrrOd
AGody, RII	LDudes, RII	RidsNrrPMBByron	
AGendelman, OGC	RidsNrrPMBraidwood	AGarmoe, NRR	

ADAMS Accession Nos.: Package/ML15355A083; Acknowledgement of Appeal/ML15351A372
 Backfit Review Panel Charter/ML15355A081

*via email

OFFICE	NRR/DPR/PGCB	NRR/DPR/PGCB:LA*	NRR/DPR/PGCB:BC*	NRR/DORL/PLBIII-2:BC*
NAME	AGarmoe	ELee	SStuchell	JPoole (EBrown for)
DATE	12/21/15	12/21/15	12/22/15	12/23/15
OFFICE	NRR/DORL:D*	OGC (NLO)*	NRR/DPR:DD	NRR/DPR:D
NAME	ABoland (GWilson for)	GMizun	AMohseni	LKokajko
DATE	12/23/15	12/23/15	12/23/15	12/23/15
OFFICE	NRR			
NAME	WDean			
DATE	01/12/16			