



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

August 29, 2016

Mr. Oscar A. Limpias
Vice President-Nuclear and CNO
Nebraska Public Power District
Cooper Nuclear Station
72676 648A Avenue
P.O. Box 98
Brownville, NE 68321

SUBJECT: COOPER NUCLEAR STATION - REPORT FOR THE AUDIT REGARDING IMPLEMENTATION OF MITIGATING STRATEGIES AND RELIABLE SPENT FUEL POOL INSTRUMENTATION RELATED TO ORDERS EA-12-049 AND EA-12-051 (CAC NOS. MF0971 AND MF0972)

Dear Mr. Limpias:

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design-Basis External Events" and Order EA-12-051, "Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML12054A736 and ML12054A679, respectively). The orders require holders of operating reactor licenses and construction permits issued under Title 10 of the *Code of Federal Regulations* Part 50 to submit for review, Overall Integrated Plans (OIPs) including descriptions of how compliance with the requirements of Attachment 2 of each order will be achieved.

By letter dated February 28, 2013 (ADAMS Accession No. ML13070A009), Nebraska Public Power District (NPPD, the licensee) submitted its OIP for Cooper Nuclear Station, (CNS), in response to Order EA-12-049. By letters dated August 27, 2013, February 26, 2014, August 26, 2014, February 23, 2015, August 27, 2015 and February 16, 2016 (ADAMS Accession Nos. ML13247A283, ML14064A201, ML14246A188, ML15062A040, ML15251A239 and ML16054A799, respectively), the licensee submitted its first six, six-month updates to the OIP. By letter dated August 28, 2013 (ADAMS Accession No. ML13234A503), the NRC notified all licensees and construction permit holders that the staff is conducting audits of their responses to Order EA-12-049 in accordance with NRC Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC-111, "Regulatory Audits" (ADAMS Accession No. ML082900195). This audit process led to the issuance of the CNS interim staff evaluation (ISE) (ADAMS Accession No. ML14007A650) and continues with in-office and onsite portions of this audit.

By letter dated February 28, 2013 (ADAMS Accession No. ML13070A007), the licensee submitted its OIP for CNS, in response to Order EA-12-051. By e-mail dated September 12, 2013 (ADAMS Accession No. ML13256A082), the NRC staff sent a request for additional information (RAI) to the licensee. By letters dated October 14, 2013, August 27, 2013, February 26, 2014, August 26, 2014, February 23, 2015, August 27, 2015 and February 16, 2016 (ADAMS Accession Nos. ML13294A027, ML13247A281, ML14064A265, ML14246A204, ML15062A038, ML15253A370 and ML16054A798, respectively), the licensee submitted its RAI

responses and first six, six-month updates to the OIP. The NRC staff's review to date led to the issuance of the CNS ISE and RAI dated December 4, 2013 (ADAMS Accession No. ML13323A105). By letter dated March 26, 2014 (ADAMS Accession No. ML14083A620), the NRC notified all licensees and construction permit holders that the staff is conducting in-office and onsite audits of their responses to Order EA-12-051 in accordance with NRC NRR Office Instruction LIC-111, as discussed above.

The ongoing audits allow the staff to review open and confirmatory items from the mitigation strategies ISE, RAI responses from the spent fuel pool instrumentation (SFPI) ISE, the licensee's integrated plans, and other audit questions. Additionally, the staff gains a better understanding of submitted and updated information, audit information provided on ePortals, and preliminary Overall Program Documents/Final Integrated Plans while identifying additional information necessary for the licensee to supplement its plan and staff potential concerns.

In support of the ongoing audit of the licensee's OIPs, as supplemented, the NRC staff conducted an onsite audit at CNS from May 23 - 26, 2016, per the audit plan dated March 7, 2016 (ADAMS Accession No. ML16083A525). The purpose of the onsite portion of the audit was to provide the NRC staff the opportunity to continue the audit review and gain key insights most easily obtained at the plant as to whether the licensee is on the correct path for compliance with the Mitigation Strategies and SFPI orders. The onsite activities included detailed analysis and calculation discussion, walk-throughs of strategies and equipment laydown, visualization of portable equipment storage and deployment, review of staging and deployment of offsite equipment, and review of installation details for SFPI equipment.

The enclosed audit report provides a summary of the activities for the onsite audit portion. Additionally, this report contains an attachment listing all open onsite audit items currently under NRC staff review.

O. Limpas

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If you have any questions, please contact me at 301-415-3204 or by e-mail at John.Hughey@nrc.gov.

Sincerely,

A handwritten signature in black ink that reads "John D. Hughey". The signature is written in a cursive style with a large initial "J" and "H".

John D. Hughey, Project Manager
Orders Management Branch
Japan Lessons-Learned Division
Office of Nuclear Reactor Regulation

Docket No.: 50-298

Enclosure:
Audit report

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

AUDIT REPORT BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO ORDERS EA-12-049 AND EA-12-051 MODIFYING LICENSES
WITH REGARD TO REQUIREMENTS FOR
MITIGATION STRATEGIES FOR BEYOND-DESIGN-BASIS EXTERNAL EVENTS
AND RELIABLE SPENT FUEL POOL INSTRUMENTATION
NEBRASKA PUBLIC POWER DISTRICT
COOPER NUCLEAR STATION
DOCKET NO. 50-298

BACKGROUND AND AUDIT BASIS

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond Design-Basis External Events" and Order EA-12-051, "Issuance of Order to Modify Licenses With Regard To Reliable Spent Fuel Pool Instrumentation," (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML12054A736 and ML12054A679, respectively). Order EA-12-049 directs licensees to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool (SFP) cooling capabilities in the event of a beyond-design-basis external event (BDBEE). Order EA-12-051 requires, in part, that all operating reactor sites have a reliable means of remotely monitoring wide-range SFP levels to support effective prioritization of event mitigation and recovery actions in the event of a BDBEE. The orders require holders of operating reactor licenses and construction permits issued under Title 10 of the *Code of Federal Regulations* Part 50 to submit for review, Overall Integrated Plans (OIPs) including descriptions of how compliance with the requirements of Attachment 2 of each order will be achieved.

By letter dated February 28, 2013 (ADAMS Accession No. ML13070A009), Nebraska Public Power District (NPPD, the licensee) submitted its OIP for Cooper Nuclear Station, (CNS), in response to Order EA-12-049. By letters dated August 27, 2013, February 26, 2014, August 26, 2014, February 23, 2015, August 27, 2015 and February 16, 2016 (ADAMS Accession Nos. ML13247A283, ML14064A201, ML14246A188, ML15062A040, ML15251A239 and ML16054A799, respectively), the licensee submitted its first six, six-month updates to the OIP. By letter dated August 28, 2013 (ADAMS Accession No. ML13234A503), the NRC notified all licensees and construction permit holders that the staff is conducting audits of their responses

Enclosure

to Order EA-12-049 in accordance with NRC Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC-111, "Regulatory Audits" (ADAMS Accession No. ML082900195). This audit process led to the issuance of the CNS interim staff evaluation (ISE) (ADAMS Accession No. ML14007A650) and continues with in-office and onsite portions of this audit.

By letter dated February 28, 2013 (ADAMS Accession No. ML13070A007), the licensee submitted its OIP for CNS, in response to Order EA-12-051. By e-mail dated September 12, 2013 (ADAMS Accession No. ML13256A082), the NRC staff sent a request for additional information (RAI) to the licensee. By letters dated October 14, 2013, August 27, 2013, February 26, 2014, August 26, 2014, February 23, 2015, August 27, 2015 and February 16, 2016 (ADAMS Accession Nos. ML13294A027, ML13247A281, ML14064A265, ML14246A204, ML15062A038, ML15253A370 and ML16054A798, respectively), the licensee submitted its RAI responses and first six, six-month updates to the OIP. The NRC staff's review to date led to the issuance of the CNS ISE and RAI dated December 4, 2013 (ADAMS Accession No. ML13323A105). By letter dated March 26, 2014 (ADAMS Accession No. ML14083A620), the NRC notified all licensees and construction permit holders that the staff is conducting in-office and onsite audits of their responses to Order EA-12-051 in accordance with NRC NRR Office Instruction LIC-111, as discussed above.

The ongoing audit process, to include the in-office and onsite portions, allows the staff to assess whether it has enough information to make a safety evaluation of the Integrated Plans. The audit allows the staff to review open and confirmatory items from the mitigation strategies ISE, RAI responses from the spent fuel pool instrumentation (SFPI) ISE, the licensee's integrated plans, and other audit questions. Additionally, the staff gains a better understanding of submitted and updated information, audit information provided on ePortals, and preliminary Overall Program Documents (OPDs)/Final Integrated Plans (FIPs) while identifying additional information necessary for the licensee to supplement its plan and address staff potential concerns.

In support of the ongoing audit of the licensee's OIPs, as supplemented, the NRC staff conducted an onsite audit at CNS from May 23 - 26, 2016, per the audit plan dated March 7, 2016 (ADAMS Accession No. ML16083A525). The purpose of the onsite portion of the audit was to provide the NRC staff the opportunity to continue the audit review and gain key insights most easily obtained at the plant as to whether the licensee is on a successful path for compliance with the Mitigation Strategies order and the SFPI order. The onsite activities included detailed analysis and calculation discussions, walk-throughs of strategies and equipment laydown, visualization of portable equipment storage and deployment, review of staging and deployment of offsite equipment, and review of installation details for SFPI equipment.

Following the licensee's declarations of order compliance, the NRC staff will evaluate the OIPs, as supplemented, the resulting site-specific OPDs/FIPs, and, as appropriate, other licensee submittals based on the requirements in the orders. For Order EA-12-049, the staff will make a safety determination regarding order compliance using the Nuclear Energy Institute (NEI) guidance document NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide" Revision 0, issued in August 2012 (ADAMS Accession No. ML12242A378), or Revision 2, issued in December 2015 (ADAMS Accession No. ML16005A625). These guidance documents are endorsed by NRC Japan Lessons-Learned Directorate (JLD) interim staff

guidance (ISG) JLD-ISG-2012-01 “Compliance with Order EA-12-049, ‘Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events’” Revision 0 (ADAMS Accession No. ML12229A174), and Revision 1 (ADAMS Accession No. ML15357A163), with certain clarifications, as providing an acceptable means of meeting the order requirements. For Order EA-12-051, the staff will make a safety determination regarding order compliance using the NEI guidance document NEI 12-02, Revision 1, “Industry Guidance for Compliance with NRC Order EA-12-051, ‘To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation’” (ADAMS Accession No. ML12240A307), as endorsed, with exceptions and clarifications, by NRC ISG JLD-ISG-2012-03 “Compliance with Order EA-12-051, ‘Reliable Spent Fuel Pool Instrumentation’” (ADAMS Accession No. ML12221A339), as providing one acceptable means of meeting the order requirements. Should the licensee propose an alternative strategy or other method deviating from the guidance, additional staff review will be required to evaluate if the alternative strategy complies with the applicable order.

AUDIT ACTIVITIES

The onsite audit was conducted at CNS from May 23, 2016, through May 26, 2016. The NRC audit team staff was as follows:

Title	Team Member	Organization
Team Lead/Project Manager	John Hughey	NRR/JLD
Technical Support – Electrical	Matthew McConnell	NRR/JLD
Technical Support – Reactor Systems	Joshua Miller	NRR/JLD
Technical Support – Balance of Plant	Kevin Roche	NRR/JLD
Technical Support – Containment / Ventilation	Bruce Heida	NRR/JLD
Technical Support – SFPI	Khoi Nguyen	NRR/JLD
Region IV Observer	Ryan Alexander	RIV/DRP

The NRC staff executed the onsite portion of the audit per the three part approach discussed in the March 7, 2016, plan, to include conducting a tabletop discussion of the site’s integrated mitigating strategies (MS) compliance program, a review of specific technical review items, and discussion of specific program topics. Activities that were planned to support the above included detailed analysis and calculation discussions, walk-throughs of strategies and equipment laydown, visualization of portable equipment storage and deployment, staging and deployment of offsite equipment, and physical sizing and placement of SFPI equipment.

AUDIT SUMMARY

1.0 Entrance Meeting (May 23, 2016)

At the onsite audit entrance meeting, the NRC staff audit team introduced itself followed by introductions from the licensee’s staff. The NRC audit team provided a brief overview of the audit’s objectives and anticipated schedule.

2.0 Integrated Mitigating Strategies Compliance Program Overview

Per the audit plan and as an introduction to the site's program, the licensee provided a presentation to the NRC audit team describing the site's strategies to meet the NRC orders. The licensee presented a review of its strategy to maintain core cooling, containment, and SFP cooling in the event of a BDBEE, and the plant modifications being done in order to implement the strategies. Also reviewed were the design and location of the storage facilities for the FLEX equipment, the interface with the National SAFER [Strategic Alliance for FLEX Emergency Response] Response Centers (NSRCs), and the SFPI modification.

3.0 Onsite Audit Technical Discussion Topics

Based on the audit plan, and with a particular emphasis on the Part 2, "Specific Technical Review Items," the NRC staff technical reviewers conducted interviews with licensee technical staff, site walk-downs, and detailed document review for the items listed in the plan. Results of these technical reviews and any additional review items needed from the licensee are documented in the audit item status table in Attachment 3, as discussed in the Conclusion section below.

3.1 Reactor Systems Technical Discussions and Walk-Downs

The NRC staff met with licensee staff to discuss the amount of leakage from the recirculation pump seals, the use of containment venting to control torus pressure, the use of the portable FLEX pump to maintain reactor pressure vessel (RPV) level, and the availability of water sources. The NRC staff reviewed the analyses and flow calculations along with applicable procedures, including the plant parameters that will be monitored to indicate the potential for reactor core damage. The NRC staff also walked down the licensee's strategies and reviewed plant procedures for implementing the core cooling and makeup strategies. The NRC staff also reviewed the modeling of an extended loss of alternating current power (ELAP) event and the actions needed to mitigate the event, including the computer code used for the ELAP analysis and input parameters assumed to generate the results of the analysis.

3.2 Electrical Technical Discussions and Walk-Downs

The NRC staff reviewed the calculations regarding battery life and the sizing of FLEX generators in addition to walking down the procedure steps for electrical load shedding. The NRC staff also walked down the main control room, low voltage switchgear rooms, high voltage switchgear rooms, and battery rooms to evaluate strategies for hydrogen control and temperature control due to heat generating electrical equipment. One audit item remains open regarding the expected high and low temperatures in containment, battery rooms, and switchgear rooms (Including the battery chargers and inverters) and why credited equipment will continue to function (see Attachment 3). The NRC staff reviewed the isolation and interactions of electrical power sources regarding the protection of Class 1E equipment from faults in portable FLEX equipment and the design elements that ensure multiple electrical sources do not attempt to simultaneously power

electrical buses. The NRC staff also walked down panels used for load shedding to evaluate feasibility and timing. Lastly, the NRC staff conducted a walk-through of portable FLEX diesel generator procedures, to include power pathways, areas where manual actions are required, and electrical isolation.

3.3 SFPI Technical Discussions and Walk-Downs

The NRC staff walked down instrument, transmitter, electronics, and display locations for the SFP level instrumentation, along with the associated cable runs. In addition, the NRC staff noted that the licensee had completed design calculations and drawings detailing the installation of the SFPI components.

3.4 FLEX Equipment Storage Configuration Discussion Areas and Walk-Downs

The FLEX storage configuration utilizes two buildings, one located within the protected area (PA) and one located outside the PA. The licensee stated that the buildings are constructed to withstand applicable BDBEEs with reasonable protection from high wind/tornado missiles being provided by the diverse location of the buildings.

A compact tractor will be stored in each FLEX building to transport FLEX equipment and perform debris removal activities. The licensee generated corrective action CR-CNS-2016-02845 to track development of a list of debris removal hand-tools to support FLEX strategies. A large pay-loader will be stored in the turbine building bay for additional debris removal capability. Section XII-2.1.3.1 of the CNS Updated Final Safety Analysis Report states that the CNS turbine building is evaluated to be designed and built to be capable of remaining structurally intact without gross structural failure following a postulated safe shutdown earthquake.

3.5 Other Technical Discussion Areas and Walk-Downs

- a. The NRC staff reviewed the licensee's plans to ensure adequate communications, lighting, personnel access, and equipment access, to successfully implement the strategies. The staff interviewed plant personnel responsible for these areas, and observed lighting and communication needs during plant walkdowns.
- b. The NRC staff reviewed the licensee's SAFER Response Plan. The response plan identified equipment staging areas, as well as off-site transportation methods and primary and alternate travel routes.
- c. The NRC staff walked down the FLEX strategies for core cooling, RPV inventory, and SFP cooling functions. This included the point of deployment for the portable FLEX pumps, hose routing, and deployment connection points (primary and alternate). The NRC staff also reviewed the licensee's hydraulic analyses to evaluate pump sizing and location relative to the water flow necessary to perform the associated functions.

- d. The NRC staff reviewed the strategy that will be implemented by the licensee to refuel the portable diesel-powered FLEX equipment and ensure adequate fuel quality. The NRC staff reviewed the instructions for refueling the equipment, as well as the equipment needed to perform the refueling.
- e. The NRC staff identified that the development of the FLEX maintenance and testing program is in progress. The program includes consideration of shelf life and acceptance criteria, manufacturer's recommendations and plant practices, as well as consideration of the Electric Power Research Institute preventative maintenance templates.
- f. The NRC staff confirmed that the licensee had evaluated deployment paths and debris removal to address the site capability to deploy FLEX equipment, within the plant Protected Area (PA), to mitigate the applicable BDBEEs.
- g. The NRC staff reviewed documentation regarding the implementation of FLEX-related training at CNS. FLEX training has been developed for licensed and non-licensed operators, shift technical advisors, and emergency response organization personnel. Continuing training and training utilizing the simulator has also been developed and scheduled.

4.0 Exit Meeting (May 26, 2016)

The NRC staff audit team conducted an exit meeting with licensee staff following the closure of onsite audit activities. The NRC staff highlighted items reviewed and noted that the results of the onsite audit trip will be documented in this report. The NRC staff also discussed the information needed for open item closure as listed in Attachment 3 of this report.

CONCLUSION

The NRC staff completed all three parts of the March 7, 2016, onsite audit plan. Each audit item listed in Part 2 of the plan was reviewed by NRC staff members while on site. In addition to the list of NRC and licensee onsite audit staff participants in Attachment 1, Attachment 2 provides a list of documents reviewed during the onsite audit portion.

In support of the continuing audit process as the licensee proceeds towards orders compliance for this site, Attachment 3 provides the status of all open audit review items that the NRC staff is evaluating in anticipation of issuance of a combined safety evaluation (SE) for both the MS and SFPI orders. The five sources for the audit items referenced below are as follows:

- a. ISE Open Items (OIs) and Confirmatory Items (CIs)
- b. Audit Questions (AQs)
- c. Licensee-identified OIP Open Items
- d. SFPI RAIs

- e. Additional information needed to support the SE

The attachments provide audit information as follows:

- a. Attachment 1: List of NRC staff and licensee staff audit participants
- b. Attachment 2: List of documents reviewed during the onsite audit
- c. Attachment 3: MS/SFPI SE Audit Items currently under NRC staff review
(licensee input needed, as noted)

While this report notes the completion of the onsite portion of the audit per the audit plan dated March 7, 2016, the ongoing audit process continues, as per the letters dated August 28, 2013, and March 26, 2014, to all licensees and construction permit holders for both orders.

Additionally, while Attachment 3 provides a list of currently open items, the status and progress of the NRC staff's review may change based on licensee plan changes, resolution of generic issues, and other NRC staff concerns not previously documented. Changes in the NRC staff review will be communicated in the ongoing audit process.

Attachments:

1. NRC and Licensee Staff Onsite Audit Participants
2. Onsite Audit Documents Reviewed
3. MS/SFPI Audit Items currently under NRC staff review

Onsite Audit Participants

NRC Staff:

John Hughey	NRR/JLD/JOMB
Khoi Nguyen	NRR/JLD/JERB
Matthew McConnell	NRR/JLD/JERB
Kevin Roche	NRR/JLD/JCBB

Joshua Miller	NRR/JLD/JERB
Bruce Heida	NRR/JLD/JCBB
Ryan Alexander	NRR/JLD/JCBB

CNS Staff:

Jerry Long	Shift Manager and Fukushima Project Manager
Jerry Horn	Design Engineering Supervisor
Matt Wilmers	Design Engineer
Kyle Kuker	Design Engineer
Ben Swoboda	Design Engineer
Steve Gocek	Design Engineer
Bob Champlin	Design Engineer
Devin Valentine	Design Engineer
Derek Helmick	Design Engineer
Don Olesen	Nuclear Instructor, Operations
Kurt Spaulding	Station Operator
Doug Hitzel	Operations Support Group Specialist
Jim Flaherty	Licensing Engineer
Brenda Kirkpatrick	Licensing Specialist

Documents Reviewed

- Engineering Report 2016-25, "Evaluation of Tornado Pathway and Size for the FLEX Storage Facilities"
- Engineering Evaluation EE 13-016, "Installation of FLEX Storage Facilities"
- Drawing NF 13293, "Overall Site Plan"
- Drawing 3125, "Control Building Basement & Mezzanine Lighting Plans," Rev. 29
- Drawing 3003 SH2, "Auxiliary One Line Diagram Motor Control Centers A, B, F, and G," Rev. 49
- Drawing 3008 "PMIS UPS One Line Diagram," Rev. 22
- "SAFER Response Plan for Cooper Nuclear Station," Rev. 001, dated September 15, 2015.
- Emergency Procedure 5.3, "Station Blackout."
- FLEX Support Guideline (FSG) 5.10FLEX.18, "Alternate Reactor Building Ventilation for FLEX Operations"
- FSG 5.10FLEX.19, "Control Building Alternate Ventilation FLEX Operations"
- FSG 5.10FLEX.01, "125 VDC DIV 1 FLEX Operations," Rev. 0
- FSG 5.10FLEX.02, "125 VDC DIV 2 FLEX Operations," Rev. 0
- FSG 5.10FLEX.03, "250 VDC DIV 1 FLEX Operations," Rev. 0
- FSG 5.10FLEX.04, "250 VDC DIV 2 FLEX Operations," Rev. 0
- FSG 5.10FLEX.06, "Fuel Pool Level Instrument Electrical Tie-In," Rev 0
- FSG 5.10FLEX.07, "4160 "F" BUS Tie-In With Off-Site Generator," Rev. 0
- FSG 5.10FLEX.08, "4160 "G" BUS Tie-In With Off-Site Generator," Rev. 0
- FSG 5.10FLEX.19, "Control Building Alternate Ventilation FLEX Operations," Rev. 0
- FSG 510FLEX.22, "Communications & Lighting Equipment FLEX Power," Rev. 0
- Phase 2 - Mark up of "Cooper Nuclear Station DC One Line Diagram" Dated July 25, 1994
- EQ-QR-269, WNA-TR-03149-GEN, Seismic qualification of other components of SFPIS.
- OC-MISC-010, MAAP Analysis to Support Initial FLEX Strategy
- Black & Veatch Calculation No. 180333.51.1001, "Soil Failure Evaluation," Rev. 1
- Calculation NEDC1 14-022, "Owner Accepted Review of Black & Veatch Calculation 51.1001, "Soil Failure Evaluation," Rev. 1
- Shop Guide MNTF-1, "Snow and Ice Removal plan," Fall 2015
- Calculation 194-4959-03, "Determination of Control Building Room Heat Up Temperature Profile for FLEX Scenario," Rev. 0
- Calculation NEDC 15-020, "Owner acceptance for TetraTech Calculation CNS001-194-4933-001, 'Calculation of HCVS Flow Rate and Vent Size' for the Hardened Containment Vent System Project," Rev. 0
- Calculation NEDC 13-30, "Spent Fuel Pool Instrumentation Total Integrated Dose Calculation"

Cooper Nuclear Station
Mitigation Strategies/Spent Fuel Pool Instrumentation Safety Evaluation Audit Items:
Audit Items Currently Under NRC Staff Review, Requiring Licensee Input As Noted

Audit Item Reference	Item Description	Licensee Input Needed
SE 2	Provide a discussion/analysis on the ability of electrical and mechanical equipment (i.e., valve solenoids, instruments, relays, etc.) located within containment and other areas of the plant (i.e., main control room, reactor core isolation cooling/High Pressure Coolant Injection System Pump Rooms, atmospheric dump valves/ safety relief valve rooms, switchgear rooms, battery rooms, etc.) that is relied upon during an ELAP to function in the expected environmental conditions for the duration of the ELAP event (i.e., indefinitely).	Licensee to provide a discussion on the expected high and low temperatures in containment, battery rooms, and switchgear rooms (Including the battery chargers and inverters) with an explanation as to why credited equipment will continue to function (e.g., temperatures remain below/above design limits).

O. Limpas

- 3 -

If you have any questions, please contact me at 301-415-3204 or by e-mail at John.Hughey@nrc.gov.

Sincerely,

/RA/

John D. Hughey, Project Manager
Orders Management Branch
Japan Lessons-Learned Division
Office of Nuclear Reactor Regulation

Docket No.: 50-298

Enclosure:
Audit report

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DATE	08/08/2016	08/05/2016	08/10/2016	08/12/2016
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DATE	08/22/2016	08/29/2016		

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