



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

May 23, 2017

Mr. Brian D. Boles
Site Vice President
FirstEnergy Nuclear Operating Co.
Davis-Besse Nuclear Power Station
5501 N. State Rte. 2, Mail Stop A-DB-3080
Oak Harbor, OH 43449-9760

**SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION—NRC TEMPORARY
INSTRUCTION 2515/191, MITIGATION STRATEGIES, SPENT FUEL POOL
INSTRUMENTATION AND EMERGENCY PREPAREDNESS INSPECTION
REPORT 05000346/2017008**

Dear Mr. Boles:

On May 17, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed a Temporary Instruction (TI) 2515/191, "Inspection of the Implementation of Mitigation Strategies and Spent Fuel Pool Instrumentation Orders and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans" inspection at your Davis-Besse Nuclear Power Station. On May 17, 2017, the NRC inspectors discussed the results of this inspection with Mr. K. Byrd and other members of your staff. The results of this inspection are documented in the enclosed report.

The inspection examined activities conducted under your license as they relate to the implementation of mitigation strategies and spent fuel pool instrumentation orders (EA-12-049 and EA-12-051) and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans, your compliance with the Commission's rules and regulations, and with the conditions of your operating license. Within these areas, the inspection involved examination of selected procedures and records, observation of activities, and interviews with station personnel.

Based on the results of this inspection, the NRC has identified one finding that was evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has also determined that this finding did not involve a violation of regulatory requirements.

If you contest the finding or significance of the finding, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, Region III; the Director, Office of Enforcement; and the NRC Resident Inspector at the Davis-Besse Nuclear Power Station.

If you disagree with the cross-cutting aspect assignment or a finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies the Regional Administrator, Region III; and the NRC Resident Inspector at the Davis-Besse Nuclear Power Station.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA Karla Stoedter Acting for/

Ann Marie Stone, Team Leader
Technical Support Staff
Division of Reactor Projects

Docket No. 50-346
License No. NPF-3

Enclosure:
Inspection Report 05000346/2017008

cc: Distribution via LISTSERV®

Letter to Brian D. Boles from Ann Marie Stone dated May 23, 2017

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION—NRC TEMPORARY
INSTRUCTION 2515/191, MITIGATION STRATEGIES, SPENT FUEL POOL
INSTRUMENTATION AND EMERGENCY PREPAREDNESS INSPECTION
REPORT 05000346/2017008

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-346
License No: NPF-3

Report No: 05000346/2017008

Licensee: FirstEnergy Nuclear Operating Company (FENOC)

Facility: Davis-Besse Nuclear Power Station

Location: Oak Harbor, OH

Dates: March 13 through May 17, 2017

Inspectors: S. Sheldon, Project Engineer (Team Lead)
B. Jose, Senior Reactor Inspector
R. Walton, Senior Operations Engineer
T. Briley, Resident Inspector

Approved by: A. Stone, Team Leader
Technical Support Staff
Division of Reactor Projects

Enclosure

SUMMARY

Inspection Report 05000346/2017008, 03/13/2017 – 05/17/2017; Davis-Besse Nuclear Power Station; Temporary Instruction 2515/191 Implementation of Mitigation Strategies and Spent Fuel Pool Instrumentation Orders and Emergency Preparedness Communication/staffing/Multi-Unit Dose Assessment Plans.

This inspection was performed by three U.S. Nuclear Regulatory Commission (NRC) regional inspectors and one resident inspector. One (Green) finding was identified by the inspectors. The finding did not involve a violation of NRC requirements. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated November 1, 2016. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6.

Cornerstone: Mitigating Systems

- Green. A finding of very low safety significance was identified by the inspectors for failing to maintain adequate room temperature in the emergency feedwater facility (EFWF) to support equipment operation. Specifically, the inspectors identified temperatures below freezing in multiple locations on emergency feedwater (EFW) system piping and in the EFWF basement. In response, the licensee installed heaters to raise room temperature.

This finding is not a violation of NRC requirements. The inspectors determined that failing to maintain adequate room temperature in the EFWF to support equipment was contrary to Nuclear Energy Institute (NEI) 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide", Rev. 2 and was a performance deficiency. The finding is of more than minor significance because it was associated with the cornerstone attribute of protection against external factors and adversely affected the mitigating systems cornerstone objective. A detailed risk evaluation (DTE) determined the finding was (Green). This finding was assigned a cross-cutting of "Challenge the Unknown". (H.11) (Section 4OA5.1.c.1)

REPORT DETAILS

4. OTHER ACTIVITIES

4OA5 Other Activities (TI 2515/191)

The objective of Temporary Instruction (TI) 2515/191, "Inspection of the Implementation of Mitigation Strategies and Spent Fuel Pool Instrumentation Orders and Emergency Preparedness Communication/Staffing/Multi-Unit Dose Assessment Plans," is to verify the licensee has adequately implemented the mitigation strategies as described in the licensee's Final Integrated Plan (ADAMS Accession No. ML16267A471), and the NRC's safety evaluation (ADAMS Accession No. ML17017A340) and to verify the licensee installed reliable water-level measurement instrumentation in their spent fuel pool. The purpose of this TI was also to verify the licensee had implemented Emergency Preparedness (EP) enhancements as described in their site-specific submittals and NRC safety assessments, including multi-unit dose assessment capability and enhancements to ensure staffing is sufficient and communications can be maintained during such an event.

The inspection also verifies plans for complying with NRC Orders EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (ADAMS Accession No. ML12229A174) and EA-12-051, Order Modifying Licenses With Regard to Reliable Spent Fuel Pool Instrumentation (ADAMS Accession No. ML12056A044) are in place and are being implemented by the licensee. Additionally, the inspection verified implementation of staffing and communications information provided in response to the March 12, 2012, request for information letter and multiunit dose assessment information provided per COMSECY-13-0010, Schedule and Plans for Tier 2 Order on Emergency Preparedness for Japan Lessons Learned, dated March 27, 2013, (ADAMS Accession No. ML12339A262).

The inspectors discussed the plans and strategies with plant staff, reviewed documentation, and where appropriate, performed plant walk downs to verify the strategies could be implemented as stated in the licensee's submittals and the NRC staff prepared safety evaluation. For most strategies, this included verification that the strategy was feasible, procedures and/or guidance had been developed, training had been provided to plant staff, and required equipment had been identified and staged. Specific details of the team's inspection activities are described in the following sections.

.1 Mitigation Strategies for Beyond-Design Basis External Events

a. Inspection Scope

The inspectors examined the licensee's established guidelines and implementing procedures for the beyond-design basis mitigation strategies. The inspectors assessed how the licensee coordinated and documented the interface/transition between existing off-normal and emergency operating procedures with the newly developed mitigation strategies. The inspectors selected a number of mitigation strategies and conducted plant walk downs with licensed operators and responsible plant staff to assess: the adequacy and completeness of the procedures; familiarity of operators with the procedure objectives and specific guidance; staging and compatibility of equipment;

and the practicality of the operator actions prescribed by the procedures, consistent with the postulated scenarios.

The inspectors verified a preventive maintenance program had been established for the Diverse and Flexible Coping Strategies (FLEX) portable equipment and periodic equipment inventories were in place and being conducted. Additionally, the inspectors examined the introductory and planned periodic/refresher training provided to the Operations staff most likely to be tasked with implementation of the FLEX mitigation strategies. The inspectors also reviewed the introductory and planned periodic training provided to the Emergency Response Organization personnel. Documents reviewed are listed in the attachment.

b. Assessment

Based on samples selected for review, the inspectors verified the licensee satisfactorily implemented appropriate elements of the FLEX strategy as described in the plant specific submittal(s) and the associated safety evaluation and determined the licensee is generally in compliance with NRC Order EA-12-049. The inspectors verified the licensee satisfactorily:

- developed and issued FLEX Support Guidelines (FSG) to implement the FLEX strategies for postulated external events;
- integrated their FSGs into their existing plant procedures such that entry into and departure from the FSGs were clear when using existing plant procedures;
- protected FLEX equipment from site-specific hazards;
- developed and implemented adequate testing and maintenance of FLEX equipment to ensure their availability and capability;
- trained their staff to assure personnel proficiency in the mitigation of beyond-design basis events; and
- developed the means to ensure the necessary off-site FLEX equipment would be available from off-site locations.

The inspectors verified non-compliances with current licensing requirements, and other issues identified during the inspection were entered into the licensee's corrective action program (CAP) as appropriate.

c. Findings

(1) Failure to Maintain Adequate Room Temperature in the Emergency Feedwater Facility

Introduction: A finding of very low safety significance (Green) was identified by the inspectors for failing to maintain adequate room temperature in the EFWF to support equipment operation. Specifically, the inspectors identified temperatures below freezing in multiple locations on EFW system piping and in the EFWF basement.

Description: On March 14, 2017, the inspectors toured the EFWF and observed cold temperatures in the basement which houses the diesel driven EFW pump credited for phase 1 FLEX implementation. The inspectors later returned with a non-contact thermometer and measured surface temperatures on various sections of EFW piping. The lowest temperature observed was 22 degrees F in the vicinity of the Target Rock

discharge flow control valve. The inspectors subsequently notified the shift manager and communicated the conditions observed. As a result, the shift manager declared the EFW pump non-functional at time 1340 and the station entered FLEX specification (NORM-LP-7202) Attachment 4 (EFW Out of Service Requirements), Nonconformance A (Any EFW component nonfunctional such that FLEX strategy cannot be implemented). Required actions are Contingency Action A.1 (Initiate actions to restore FLEX Phase 1 capability with a restoration time of 24 hours) and A.2 (Implement compensatory action or restore nonfunctional component with a restoration time of 90 days). Additionally, the station entered FLEX specification (NORM-LP-7202) Attachment 2 (FLEX Connection Points Out of Service Requirements), Nonconformance A (One required connection point Nonfunctional). Required actions are Contingency Action A.1 (validate availability of alternate (“N” or “N+1”) function with a restoration time of 24 hours) and A.2 (restore connection point to functional status in 45 days).

The licensee initiated 2017-02870; “EFWF Lower Level EFW and Fire Piping Exposed to Freezing Temperatures”, and added additional heating units and ventilation fans to the basement of the EFWF in an effort to raise temperature along with enhancing equipment operator monitoring every three hours to ensure a basement recirculation damper that communicated directly with the outside environment stayed closed.

The licensee has since installed a damper on the building intake opening and modified the heating, ventilation and air conditioning system to provide better temperature control. They also implemented increased operator monitoring during periods with low outside temperatures.

Analysis: The inspectors determined that failing to maintain adequate room temperature in the EFWF to support equipment was contrary to NEI 12-06, “Diverse and Flexible Coping Strategies (FLEX) Implementation Guide”, Rev. 2 and was a performance deficiency.

Davis Besse Procedure NOP-LP-7200, “FLEX Program For Davis-Besse” states that the program meets the requirements of NEI 12-06, “Diverse and Flexible Coping Strategies (FLEX) Implementation Guide”, Rev. 2. NEI 12-06, Rev. 2, defines FLEX equipment as:

“Equipment stored on-site or off-site whose primary function is to support FLEX strategies. The on-site equipment may be installed, pre-staged, or portable equipment based on the site-specific sequence of events for the ELAP with LUHS event and may be stored within the owner controlled area or in close proximity to the site”.

Further, NEI 12-06, Rev. 2, Section 11.3.3 requires FLEX equipment should be stored in a location, or locations, such that no one external event can reasonably fail the site FLEX capability.

Although EFWF temperature issues were previously identified by the licensee, the NRC identified inadequacies in the licensee’s characterization and evaluation of the issue of concern that had not been previously identified. Therefore, the finding is being treating as NRC-identified.

The failure to maintain adequate room temperature in the EFWF to support equipment operation is of more than minor significance because it was associated with the

cornerstone attribute of protection against external factors and adversely affected the mitigating systems cornerstone objective “To ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage).”

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, “Significance Determination Process,” Attachment 0609.04, “Phase 1 – Initial Screening and Characterization of findings,” Table 3 for the mitigating systems cornerstone. The inspectors answered “Yes” to question E which directed the inspectors to IMC 0609, Appendix O. As the issue involved equipment credited in the plant’s EOPs for any loss of normal feedwater or auxiliary feedwater, and not just those associated with large external events and extended loss of alternating current (AC) power (ELAP), Appendix O directed the inspectors to Appendix A. The inspectors used Appendix A, Exhibit 2, “Mitigating Systems Screening Questions”.

The inspectors answered “Yes” to the question in Section B of Exhibit 2, and “Yes” to question 1 of Exhibit 4, screening the issue to a Detailed Risk Evaluation (DRE). The Senior Risk Analyst (SRA) performed a DRE of the performance deficiency. The Davis Besse simplified plant analysis risk (SPAR) model was used, and assuming an availability/reliability value for the EFW system of $1E-1$, the delta-CDF for one year exposure was calculated to be approximately $1E-6$. Applying the exposure time of three days yielded a result of approximately $1E-8$. The DRE was completed and given an independent review by another SRA on April 13, 2017. The DRE concluded that the issue is (Green).

This finding has a cross-cutting aspect in the area of human performance. Specifically, the cross-cutting aspect of “Challenge the Unknown” was assigned to the finding because an equipment operator previously toured the EFWF basement and did not verify adequate temperature of components despite dramatic temperature variations throughout facility indicative of a potential problem. (H.11)

Enforcement: This finding does not involve enforcement action because no violation of regulatory requirements was identified. Because the finding does not involve a violation of regulatory requirements and has very low safety significance, it is identified as **FIN 05000346/2017008-01, Failure to Maintain Adequate Room Temperature in the Emergency Feedwater Facility.**

.2 Spent Fuel Pool Instrumentation

a. Inspection Scope

The inspectors examined the licensee’s newly installed spent fuel pool instrumentation. Specifically, the inspectors verified the sensors were installed as described in the plant specific submittals and the associated safety evaluation and that the cabling for the power supplies and the indications for each channel are physically and electrically separated. Additionally, environmental conditions and accessibility of the instruments were evaluated. Documents reviewed are listed in the attachment.

b. Assessment

Based on samples selected for review, the inspectors determined the licensee satisfactorily installed and established control of the spent fuel pool (SFP)

instrumentation as described in the plant specific submittal(s) and the associated safety evaluation and determined the licensee is generally in compliance with NRC Order EA-12-051. The inspectors verified the licensee satisfactorily:

- installed the SFP instrumentation sensors, cabling and power supplies to provide physical and electrical separation as described in the plant specific submittal(s) and safety evaluation;
- installed the SFP instrumentation display in the location, environmental conditions and accessibility as described in the plant specific submittal(s);
- trained their staff to assure personnel proficiency with the maintenance, testing, and use of the SFP instrumentation; and
- developed and issued procedures for maintenance, testing and use of the reliable SFP instrumentation.

The inspectors verified non-compliances with current licensing requirements, and other issues identified during the inspection were entered into the licensee's CAP.

c. Findings

No findings were identified.

.3 Staffing and Communication Request for Information

a. Inspection Scope

Through discussions with plant staff, review of documentation and plant walk downs, the inspectors verified the licensee has implemented required changes to staffing, communications equipment and facilities to support a multi-unit ELAP scenario as described in the licensee's staffing assessment and the NRC safety assessment. The inspectors also verified the licensee has implemented multi-unit dose assessment (including releases from spent fuel pools) capability using the licensee's site-specific dose assessment software and approach as described in the licensee's multi-unit dose assessment submittal. Documents reviewed are listed in the attachment.

b. Assessment

The inspectors reviewed information provided in the licensee's multi-unit dose submittal and in response to the NRC's March 12, 2012, request for information letter and verified that the licensee satisfactorily implemented enhancements pertaining to Near-Term Task Force Recommendation 9.3 response to a large scale natural emergency event that results in an extended loss of all AC power to all site units and impedes access to the site. The inspectors verified the following:

- the licensee satisfactorily implemented required staffing changes to support a multi-unit ELAP scenario;
- EP communications equipment and facilities are sufficient for dealing with a multi-unit ELAP scenario; and
- the licensee implemented multi-unit dose assessment capabilities (including releases from spent fuel pools) using the licensee's site-specific dose assessment software and approach.

The inspectors verified non-compliances with current licensing requirements, and other issues identified during the inspection were entered into the licensee's CAP.

c. Findings

No findings were identified.

4OA6 Management Meeting

.1 Exit Meeting Summary

On May 17, 2017, the NRC inspectors discussed the results of this inspection with Mr. K. Byrd and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspectors confirmed none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meetings

On March 17, 2017, the NRC inspectors discussed the preliminary results of this inspection with Mr. K. Byrd and other members of the licensee's staff. At the time, one issue remained open within the mitigating strategies section. The licensee acknowledged the issues presented. The inspectors confirmed none of the potential report input discussed was considered proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

K. Byrd	Director, Engineering
T. Brown	Director, Performance Improvement
A. Wise	Director, Fleet Engineering
P. McCloskey	Manager, Regulatory Compliance
G. Laird	Manager, Operations
G. Michael	Manager, Design Engineering
B. Pollauf	Manager, Plant Engineering
J. Vetter	Manager, Emergency Response
K. Zellers	Manager, Technical Services
J. Carr	Operations (FLEX Team)
T. St. Clair	Fleet Engineer (FLEX Team)
D. Blakely	Engineering Analysis
S. Hall	Site Communications
D. Gerren	Technical Services
J. Greenwood	Technical Services
V. Schultz-Wadsworth	Regulatory Compliance
G. Wolf	Regulatory Compliance

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000346/2017008-01	FIN	Failure to Maintain Adequate Room Temperature in the Emergency Feedwater Facility (Section 4OA5.1.c.1)
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Discussed

None.

LIST OF DOCUMENTS REVIEWED

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

Condition Reports Initiated as a Result of the Inspection

- 2017-02870; EFWF Lower Level EFW and Fire Piping Exposed to Freezing Temperatures; 3/14/17
- 2017-20653; 2017 NRC FLEX FSF Posters Need Update to Match Revision of 29.FSG.02; 1/23/17

Condition Reports Reviewed

- 2015-03126; Challenges with Compliance to NRC Mitigating Strategy Orders; 3/11/15
- 2015-10736; Outdated Information to the NRC for Fukushima Response Needs to be Updated; 8/11/15
- 2015-12300; PA-DB-15-02: Required Documentation Not Able to be Produced for EFW/FLEX Projects; 9/18/15
- 2015-15725; FLEX NRC Audit 2015: 107-B, Maintenance and Testing Audit Item; 11/18/15
- 2015-15758; FLEX NRC Audit 2015: 98-B, 4160 V Electrical Protection from FLEX Equipment; 11/19/15
- 2015-17340; DB EFW / FLEX - Installation Issues Associated with Backdraft Damper; 12/30/15
- 2015-22196; Configuration Control – Change to Fuel Pool Level Signal Processor; 3/25/15
- 2016-01698; Conditional Release of EFW Back Draft Dampers Per NOP-MS-4001 (Warehousing); 2/4/16
- 2016-02963; Challenges Exist for Compliance with NRC Order EA-12-049 (FLEX); 3/3/16
- 2016-06445; During Performance of DB-TP-12420 EFW Building Heater E505-9 was Determined to Not be Functioning; 5/6/16
- 2016-06446; During Performance of DB-TP-12420, Thermostat for Heater E505-10 Let Out a Puff of Smoke; 5/6/16
- 2016-06950; EFW Facility Heater E505-6 Fan Does Not Function; 5/20/16
- 2016-07020; EFWF Heater E505-9 Found Non Functional After Initial Performance Testing Completed Satisfactory; 5/23/16
- 2016-07733; EFWF/FLEX Sound Powered Phone Bleedover from Gaitronics Page Circuit; 6/14/16
- 2016-08044; Fan Testing for EFW Facility Were Above Values Expected For Work Order; 6/22/16
- 2016-12801; EFW Pump Room Temperature is Below 60 Degrees F; 10/26/16
- 2016-12804; Procedure DB-OP-06235 Provides Overly Conservative Indoor Temperature Limits for EFW Fuel Oil Viscosity; 10/26/16
- 2016-12991; EFW Pump Availability Without EFWF Ventilation Restored; 11/1/16
- 2016-14214; EFW Facility Basement Temperature Concerns; 12/12/16
- 2016-14410; Freezing Conditions in the EFW Building; 12/18/16

Calculations

- C-ME-050.05-007; Emergency Feedwater Facility (EFWF) HVAC Cooling, Heating, Airflow & Equipment Sizing Calculation; Rev 1

Drawings

- OS-0062; Sheet 1, Emergency Feedwater System; Rev 3
- OS-0062; Sheet 2, Emergency Feedwater System; Rev 1

Miscellaneous Documents

- NEI 12-06; Diverse and Flexible Coping Strategies (FLEX) Implementation Guide; Rev 2
- Report of Geotechnical Engineering Services Liquefaction Vulnerability Study; 3/18/16
- Fuel Oil Analytical Report AJ79206; 6/23/16
- Fuel Oil Analytical Report AJ80481; 7/7/16
- Fuel Oil Analytical Report AJ83024; 8/8/16
- Vendor Manual M-768-00001; Emergency Feedwater Pump; Rev 0

Modifications

- ECP 13-0195-000; Emergency Feedwater Facility; Rev 12
- ECP 16-0567-000; EFW Heaters and HV1355 Setpoint Change; Rev 0

Notifications

- 200679718; Annual FLEX Material Inventory and Condition Check
- 601069445; Document Change Request, Procedure DB-OP-06235, EFW Facility Electrical and Support Systems; 10/18/16
- 601078316; Document Change Request, Procedure DB-OP-06235, EFW Facility Electrical and Support Systems; 12/21/16
- 601082564; 10 Year FLEX Charging Pump Hose Replacement
- 601092317; Document Change Request, DBBP-OPS-0037, Flex Equipment Inventory; 3/15/17
- 601092318; Revise Maintenance Plan 24452 for High Voltage Detectors Batteries; 3/15/17
- 601092319; Document Change Request, FLEX High Voltage Detectors Battery Storage; 3/15/17
- 601092140; Evaluate EFW Piping Due to Freezing Conditions; 3/14/17
- 601007600; FLEX Equip Testing & Prcd V&V Tracking; 11/05/15
- 601072849; Evaluate EFWF HVAC After ECP Implemented; 11/14/16
- 601092140; Evaluate EFW Piping Due to Freezing Temps; 03/14/17
- 601092149; Document Change Request, Procedure DBBP-OPS-0037; 3/14/17

Procedures

- 20.300.SBO; Loss of Offsite and Onsite Power; Rev 23
- DBBS-OPS-0037; FLEX Equipment Inventory; Rev 0
- DB-CH-06900; Operational Chemical Control Limits; Rev 58
- DB-MI-05340; Calibration of Spent Fuel Pool Level Transmitter; Rev 0
- DB-OP-02000; RPS, SFAS, SFRCS Trip or SG Tube Rupture; Rev 29
- DB-OP-02521; Loss of AC Bus Power Sources; Rev 25
- DB-OP-02544; Security Events and Threats; Rev 21
- DB-OP-02700; Station Blackout; Rev 0
- DB-OP-02701; Long Term RCS Inventory Control; Rev 0
- DB-OP-02703; Alternate Low Pressure Emergency Feedwater; Rev 0
- DB-OP-02704; Extended Loss of AC Power DC Load Management; Rev 0
- DB-OP-02705; Initial Assessment and FLEX Equipment Staging; Rev 0
- DB-OP-02706; EFW Storage Tank Makeup; Rev 0
- DB-OP-02708; Alternate RCS Boration; Rev 0
- DB-OP-02710; CFT Isolation – Venting; Rev 0

- DB-OP-02711; Alternate Spent Fuel Pool Makeup; Rev 0
- DB-OP-02714; Shutdown RCS Makeup; Rev 0
- DB-OP-02715; Containment Isolation and Closure; Rev 0
- DB-OP-02721; Restore 480 VAC Power to E1 and F1; Rev 0
- DB-OP-02723; Restore 4160 VAC Power to C1 and D1; Rev 0
- DB-OP-02725; Control Room and Miscellaneous Habitability Actions; Rev 0
- DB-OP-02754; FLEX Small Portable Generators; Rev 0
- DB-OP-02755; FLEX Communications; Rev 0
- DB-OP-02756; FLEX 4160V Breaker Cart; Rev 0
- DB-OP-02757; FLEX Debris Removal Truck; Rev 0
- DB-OP-02759; FLEX Portable Fuel Oil Pumps; Rev 0
- DB-OP-06234; Emergency Feedwater System; Rev 1
- DB-OP-06235; EFW Facility Electrical And Support System Procedure; Rev 1
- DB-OP-06235; EFW Facility Electrical and Support Systems Procedure; Rev 1
- DB-OP-06913; Seasonal Plant Preparation Checklist; Rev 29
- NOBP-ER-3902; Component Template Development ER Workbench Module 2; Rev 7
- NOP-CC-2003; Engineering Changes; Rev 21
- NOP-LP-5412; DBNPS MIDAS Multiple Accident Dose Assessment Software; Rev 0
- NOP-OP-1002; Conduct of Operations; Rev 12
- NORM-CC-2001; Engineering Change Process Flowcharts; Rev 0
- NORM-ER-3743; FLEX Pumps Horizontal; Rev 2
- NORM-LP-7201; Davis Besse FLEX Validation Process Report; Rev 0
- NORM-LP-7202; Davis-Besse Specifications for FLEX Equipment Out of Service; Rev 2
- NORM-LP-7203; Davis-Besse FLEX Final Integrated Plan; Rev 0
- NORM-LP-7204; Davis-Besse FLEX Strategy Design & Equipment Bases Detail; Rev 0
- NORM-LP-7205; Davis-Besse FLEX SAFER Response Plan; Rev 0
- NORM-LP-7206; Davis-Besse FLEX Phase 2 Staffing Study; Rev 0
- RA-EP-02310; Technical Support Center Activation and Response; Rev 13
- RA-EP-02410; Operations Support Center Activation and Response; Rev 20
- RA-EP-02780; Station Isolation; Rev 7

Training Documents

- DBNPS FLEX Mitigation Strategies Overview for Emergency Response Decision Makers
- GEN-SITESPECIFICFLEX DB; Davis-Besse Site Specific FLEX Training; Rev 0
- G-GEN-FFDM DB; Davis-Besse Mitigating Strategies (FLEX) Overview for Decision Makers; Rev 0
- OPS-FLX-002; Davis-Besse Mitigating Strategies (FLEX) SFP Level Instrumentation
- OPS-FLX-005; Davis-Besse Shutdown ELAP and FSGs
- Various Training Completion Records

Work Orders

- WO 41942940; EDP-37122 Perform Phase Rotation Verification DIV 1 Switchgear; 10/4/15

LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Documents Access and Management System
CAP	Corrective Action Program
CFR	<i>Code of Federal Regulations</i>
DRE	Detailed Risk Evaluation
DRP	Division of Reactor Projects
EFW	Emergency Feedwater
EFWF	Emergency Feedwater Facility
ELAP	Extended Loss of AC Power
EP	Emergency Preparedness
FLEX	Diverse and Flexible Coping Strategies
FSG	FLEX Support Guidelines
IMC	Inspection Manual Chapter
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
SDP	Significance Determination Process
SFP	Spent Fuel Pool
SRA	Senior Reactor Analyst
TI	Temporary Instruction