



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

June 20, 2014

Mary G. Korsnick  
Chief Nuclear Officer  
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SUBJECT: NINE MILE POINT NUCLEAR STATION UNITS 1 AND 2 – STAFF  
ASSESSMENT OF THE FLOODING WALKDOWN REPORT SUPPORTING  
IMPLEMENTATION OF NEAR-TERM TASK FORCE RECOMMENDATION 2.3  
RELATED TO THE FUKUSHIMA DAI-ICHI NUCLEAR POWER PLANT  
ACCIDENT (TAC NOS. MF0249 AND MF0250)

Dear Ms. Korsnick:

On March 12, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued a request for information letter per Title 10 of the *Code of Federal Regulations*, Section 50.54(f) (50.54(f) letter). The 50.54(f) letter was issued to power reactor licensees and holders of construction permits requesting addressees to provide further information to support the NRC staff's evaluation of regulatory actions that may be taken in response to lessons learned from Japan's March 11, 2011, Great Tōhoku Earthquake, resultant tsunami, and subsequent accident at the Fukushima Dai-ichi nuclear power plant. The request addressed the methods and procedures for nuclear power plant licensees to conduct seismic and flooding hazard walkdowns to identify and address degraded, nonconforming, or unanalyzed conditions through the corrective action program, and to verify the adequacy of the monitoring and maintenance procedures.

By letters dated June 8, 2012, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12164A369), November 27, 2012, (ADAMS Accession No. ML12335A029), and January 31, 2014 ADAMS Accession No. ML14038A122), Constellation Energy Nuclear Group, LLC responded to this request for Nine Mile Point Nuclear Station Units 1 & 2.

By letter dated November 27, 2012, Constellation Energy Nuclear Group, LLC (Constellation) submitted a Flooding Walkdown Report as requested in Enclosure 4 of the 50.54(f) letter for the Nine Mile Point Nuclear Station, Units 1 and 2 (NMP) site. By letter dated January 31, 2014, Constellation provided a response to the NRC request for additional information for the staff to complete its assessments.

The NRC staff reviewed the information provided and, as documented in the enclosed staff assessment, determined sufficient information was provided to be responsive to Enclosure 4 of the 50.54(f) letter.

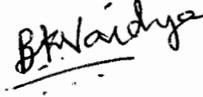
The scope of this staff assessment is limited to ensure that the licensee provided the information correctly in response to the staff request. The Regulatory Commitment made by the licensee in its submission dated June 8, 2012, concerning submission of the report documenting the results of flooding design basis walkdowns by November 27, 2012, has been completed.

M. Korsnick

- 2 -

If there are any questions, please contact me at (301) 415-3308 or email at [Bhalchandra.Vaidya@nrc.gov](mailto:Bhalchandra.Vaidya@nrc.gov).

Sincerely,



Bhalchandra Vaidya, Project Manager  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos.: 50-220, and 50-410

Enclosure:  
Staff Assessment of Flooding Walkdown Report

cc w/enclosure:

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

STAFF ASSESSMENT BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO FLOODING WALKDOWN REPORT  
NEAR-TERM TASK FORCE RECOMMENDATION 2.3  
RELATED TO THE FUKUSHIMA DAI-ICHI NUCLEAR POWER PLANT ACCIDENT  
NINE MILE POINT NUCLEAR STATION UNITS 1 & 2  
DOCKET NOS. 50-220 AND 50-410

1.0 INTRODUCTION

On March 12, 2012,<sup>1</sup> the U.S. Nuclear Regulatory Commission (NRC) issued a request for information per Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(f) (50.54(f) letter) to all power reactor licensees and holders of construction permits in active or deferred status. The request was part of the implementation of lessons learned from the accident at the Fukushima Dai-ichi nuclear power plant. Enclosure 4, "Recommendation 2.3: Flooding,"<sup>2</sup> to the 50.54(f) letter requested licensees to conduct flooding walkdowns to identify and address degraded, nonconforming, or unanalyzed conditions using the corrective action program (CAP), verify the adequacy of monitoring and maintenance procedures, and report the results to the NRC.

The 50.54(f) letter requested licensees to include the following:

- a. Describe the design basis flood hazard level(s) for all flood-causing mechanisms, including groundwater ingress.
- b. Describe protection and migration features that are considered in the licensing basis evaluation to protect against external ingress of water into structures, systems, and components (SSCs) important to safety.
- c. Describe any warning systems to detect the presence of water in rooms important to safety.
- d. Discuss the effectiveness of flood protection systems and exterior, incorporated, and temporary flood barriers. Discuss how these systems and barriers were evaluated using the acceptance criteria developed as part of Requested Information item 1.h.

<sup>1</sup> ADAMS Accession No. ML12053A340.

<sup>2</sup> ADAMS Accession No. ML12056A050.

- e. Present information related to the implementation of the walkdown process (e.g., details of selection of the walkdown team and procedures) using the documentation template discussed in Requested Information item 1.j, including actions taken in response to the peer review.
- f. Results of the walkdown including key findings and identified degraded, nonconforming, or unanalyzed conditions. Include a detailed description of the actions taken or planned to address these conditions using guidance in Regulatory Issues Summary 2005-20, Revision 1, Revision to the NRC Inspection Manual Part 9900 Technical Guidance, "Operability Conditions Adverse to Quality or Safety," including entering the condition in the CAP.
- g. Document any cliff-edge effects identified and the associated basis. Indicate those that were entered into the CAP. Also, include a detailed description of the actions taken or planned to address these effects.
- h. Describe any other planned or newly installed flood protection systems or flood mitigation measures including flood barriers that further enhance the flood protection. Identify results and any subsequent actions taken in response to the peer review.

In accordance with the 50.54(f) letter, Enclosure 4, Required Response Item 2, licensees were required to submit a response within 180 days of the NRC's endorsement of the flooding walkdown guidance. By letter dated May 21, 2012<sup>3</sup>, the Nuclear Energy Institute (NEI) staff submitted NEI 12-07, Revision 0, "Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features" to the NRC staff to consider for endorsement. By letter dated May 31, 2012<sup>4</sup>, the NRC staff endorsed the walkdown guidance.

By letter dated November 27, 2012<sup>5</sup>, Constellation Energy Nuclear Group, LLC (Constellation, the licensee), provided a response to Enclosure 4 of the 50.54(f) letter Required Response Item 2, for the Nine Mile Point Nuclear Station (NMP), Units 1 and 2. The NRC staff issued a request for additional information (RAI) to the licensee regarding the available physical margin (APM) dated December 23, 2013<sup>6</sup>. The licensee responded by letter dated January 31, 2014<sup>7</sup>.

The NRC staff evaluated the licensee's submittals to determine if the information provided in the walkdown report met the intent of the walkdown guidance and if the licensee responded appropriately to Enclosure 4 of the 50.54(f) letter.

## 2.0 REGULATORY EVALUATION

The SSCs important to safety in operating nuclear power plants are designed either in accordance with, or meet the intent of Appendix A to 10 CFR Part 50, General Design Criteria (GDC) 2: "Design Bases for protection against natural phenomena;" and Appendix A "Seismic and Geological Criteria for Nuclear Plants" to 10 CFR Part 100. Criterion 2 states that SSCs important to safety at nuclear power plants shall be designed to withstand the effects of natural

<sup>3</sup> ADAMS Package Accession No. ML121440522.

<sup>4</sup> ADAMS Accession No. ML12144A142.

<sup>5</sup> ADAMS Accession No. ML12335A029.

<sup>6</sup> ADAMS Accession No. ML13325A891.

<sup>7</sup> ADAMS Accession No. ML14038A122.

phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunamis, and seiches without loss of capability to perform their safety functions.

For initial licensing, each licensee was required to develop and maintain design bases that, as defined by 10 CFR 50.2, identify the specific functions to be performed by an SSC, and the specific values or ranges of values chosen for controlling parameters as reference bounds for the design.

The design bases for the SSCs reflect appropriate consideration of the most severe natural phenomena that have been historically reported for the site and surrounding area. The design bases also reflect sufficient margin to account for the limited accuracy, quantity, and period of time in which the historical data have been accumulated.

The current licensing basis (CLB) is the set of NRC requirements applicable to a specific plant, licensee's written commitments for ensuring compliance with, and operation within, applicable NRC requirements and the plant-specific design basis that are in effect.

The scope of this staff assessment is limited to ensure that the licensee provided the information correctly in response to the staff request. The Regulatory Commitment made by the licensee in its submission dated June 8, 2012, concerning submission of the report documenting the results of flooding design basis walkdowns by November 27, 2012, has been completed.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Design Basis Flooding Hazard for Nine Mile Point Nuclear Station

All elevations are as reported in U.S. Lake Survey (USLS) 1935.

##### Nine Mile Point, Unit 1

The licensee stated in the walkdown report that Nine Mile Point Nuclear Station, Unit 1 (NMP1) was not designed to satisfy the Standard Review Plan (SRP) requirements but was instead based on the Principal Design Criteria issued by the U.S. Atomic Energy Commission (USAEC) on November 22, 1965. However, the licensee reported that the individual plant evaluation for external events (IPEEE) was completed to find vulnerabilities with respect to the SRP external flooding criteria.

The controlling flooding hazard at the NMP1 site involves the probable maximum precipitation (PMP) event in combination with the historic maximum lake level. The PMP elevation for NMP1 reported in the licensee walkdown report is 261.75 ft. The most critical maximum precipitation event is reported as a 20 minute, 9.9 inch PMP. The PMP was determined using the National Oceanic and Atmospheric Administration (NOAA), Department of Commerce: Hydro Meteorological Report (HMR) No. 51, "Probable Maximum Precipitation – United States East of the 105th Meridian" and HMR No. 52, "Application of Probable Maximum Precipitation – United States East of the 105th Meridian." The U.S. Army Corps of Engineers (USACE) Flood Hydrograph Package (HEC-1) was used to determine peak runoff rates from and USACE Water Surface Profiles Program (HEC-2) was used to determine peak water surface elevations. The licensee assumed storm sewer was inoperable and culverts southwest of the NMP1 switchyard were not blocked. The flood hazard analysis for NMP1 assumes no groundwater ingress.

The licensee indicated in the walkdown report that the NMP1 Updated Final Safety Analysis Report (UFSAR) identifies the maximum lake level for Lake Ontario as 249 ft. The IPEEE reports that the historical maximum lake level for Lake Ontario is 250.19 ft. The historical maximum lake level is based on the NMP2 UFSAR.

### Nine Mile Point Unit 2

The licensee indicated in the walkdown report that the information regarding the design basis flooding hazard at the NMP2 site was obtained from the NMP2 UFSAR. The design basis flood for NMP2 includes a probable maximum flood (PMF) event, PMP event, and combined probable maximum surge (PMS) and the probable maximum surge and seiche due to a probable maximum wind storm (PMWS). The controlling PMF hazard at the NMP2 site involves the PMP event in combination with the historic maximum lake level of Lake Ontario. The PMF elevation for the NMP2 site reported by the licensee in its walkdown report is 262.5 ft. The most critical maximum precipitation event is reported as a 20 minute, 9.9 inch PMP and the maximum lake level of Lake Ontario is reported as 250.19 ft. The PMP was determined using the same methods described above for NMP1. The licensee assumed the storm sewer was inoperable and the culverts southwest of the NMP1 switchyard were not blocked. The flood hazard analysis for NMP2 assumes no groundwater ingress.

Additionally, the licensee reported the design basis flood event of the historical maximum precipitation in combination with the probable maximum lake level for NMP2. This flooding event results in a flood elevation of 259.7 ft. in the ditch immediately south of the revetment protecting the site and an elevation of 260.4 ft. on the north of the NMP2 plant buildings. The PMP value for this event was 8.4 inches per hour determined using NOAA, U.S. Department of Commerce: HMR No. 33.

The licensee reported in the walkdown report the combined PMS and probable maximum surge and seiche due to a PMWS resulted in wave run up to an elevation of 261 ft. at the revetment. The PMWS event was based on a historical storm that caused surges on Lake Ontario at the probable maximum lake level, modeled using the proposed American Nuclear Society (ANS) Standards for Determining Design Basis Flooding at Power Reactor Sites.

The licensee indicated that neither NMP1 nor NMP2 are susceptible to major stream or river flooding and no dams exist upstream of the site.

Based on the NRC staff's review of both the NMP1 and NMP2 walkdown reports, the licensee appears to have described the design basis flood hazard level(s) as requested in the 50.54(f) letter, and consistent with the walkdown guidance.

## 3.2 Flood Protection and Mitigation

### 3.2.1 Flood Protection and Mitigation Description

#### Nine Mile Point, Unit 1

The current licensing basis reported by the licensee in the walkdown report for NMP1 calls for protection of SSCs from a flooding event to an elevation of 249 ft. No mode of operation is part of the licensing basis.

### Nine Mile Point, Unit 2

The licensee reported that the current licensing basis for NMP2 calls for flood protection features to prevent loss of safety-related equipment required to achieve and maintain cold shutdown resulting from the most severe conditions at the site to an elevation of 262.5 ft. The duration of the flood event above 261 ft. is 20 minutes and no mode of operation is part of the licensing basis.

#### 3.2.2 Incorporated and Exterior Barriers

### Nine Mile Point, Unit 1

The licensee reported that NMP1 has incorporated exterior barriers that are permanently in-place, requiring no operator manual actions. These barriers include: grade elevation of structures housing SSCs, hydrostatic features, water stops, and a rock dike.

The NMP1 plant is located on a topographic high on the southeast shore of Lake Ontario; the terrain naturally slopes toward the lake. The site grade is 259 ft., about 9 ft. above the record high lake level of 250.19 ft. Natural drainage is into the lake.

The floor grade of the Control Room is at an elevation of 277 ft. The exterior walls and base slab of the Waste Disposal Building are designed to resist hydrostatic pressure and uplift due to flooding up to 249 ft. The Turbine Building floor grade is at an elevation of 261 ft. and, below grade, the turbine building is enclosed by a poured in place concrete foundation. Additionally, preformed rubber water stops are incorporated into below grade concrete joints of the Turbine Building for water-tightness. The Reactor Building floor grade is at an elevation of 261 ft. Personnel entrances and equipment access to buildings important to safety are provided at or above an elevation of 261 ft.

NMP1 is protected from flooding (and site fill erosion) by a 1,000-ft long rock dike system. The top of the dike is at an elevation of 263 ft., 2 ft. higher than yard grade. The dike provides protection from wave action and ice accumulation. The NMP1 plant is encompassed within the NMP2 site, which has berms on all three land sides to divert PMF flow from the adjacent watershed away from the plant and culverts to control drainage within the areas protected by the berms.

### Nine Mile Point, Unit 2

The licensee reported that NMP2 has incorporated exterior barriers that are permanently in-place, requiring no operator manual actions. These barriers include: Revetment Ditch System, site and structure grade, flood control berms and railroad stop logs, water-tight penetration sleeves and conduits, and concrete encasements with water stops.

The NMP2 plant is located on a topographic high on the southeast shore of Lake Ontario; the terrain naturally slopes toward the lake. The site grade rises along the protected area security fence, about 80 ft. to 100 ft. from the shoreline to an elevation of at least 260 ft., about 10 ft. above the record high lake level of 250.19 ft. Natural drainage is into the lake.

The site is protected from flooding (and site fill erosion) by a 50-ft wide rock dike and a 24-ft wide interior revetment ditch system. The revetment structure can sustain a high degree of

damage and still perform its function. The top of the revetment is at elevations ranging from 263 ft. to 265 ft., which is 2 ft. to 4 ft. above the estimated wave runup (261 ft.) in a PMF event.

The NMP2 site is also protected by berms located on all three land sides, which divert PMF flow from the adjacent watershed away from the plant. Runoff inside the berms is controlled by culverts and overland flow to the north, next to the plant structures.

Structures housing safety-related equipment and systems (e.g., the Reactor Building, the Control Building, and the Diesel Generator Building) were designed with a flood elevation of 261 ft. or above. All penetrations through the exterior walls below grade level have watertight penetration sleeves. Underground cables are housed in water-tight conduits enclosed in reinforced concrete encasements to protect them from wetting and flooding. The concrete encasements form electrical duct lines. Duct lines entering a structure have joints with water stops to prevent in-leakage from the design basis groundwater or floodwater levels into the structures.

### 3.2.3 Temporary Barriers and Other Manual Actions

The NMP site does not have temporary barriers and other manual actions requiring operator action.

### 3.2.4 Reasonable Simulation and Results

The licensee stated that there are no manual actions nor temporary barriers, therefore the NMP site walkdown reports did not assess simulations.

### 3.2.5 Conclusion - Protection and Mitigation Features

Based on the NRC staff's review, the licensee appears to have described protection and mitigation features as requested in the 50.54(f) letter, and is consistent with the walkdown guidance.

## 3.3 Warning Systems

There are no credited external flood warning systems installed in rooms important to safety at the NMP site.

The licensee reported that weather conditions or flood levels could trigger procedures for providing flood protection and mitigation. These include: (1) an operating procedure to close all external doors and vents, conduct walkdowns to observe potential water intrusion (including catchment rigs that protect equipment), and confirm equipment operability and availability; and (2) an administrative procedure to prevent debris accumulation on the North Security Delay Barrier Fence Gate during a flood event and to prepare sand bags and obtain portable pumps if forecasted precipitation exceeds 6 inches in 24 hours.

Based on the NRC staff's review, the licensee appears to have provided information to describe any warning systems as requested in the 50.54(f) letter, and is consistent with the walkdown guidance.

### 3.4 Effectiveness of Flood Protection Features

#### Nine Mile Point, Unit 1

The licensee visually inspected flood protection features during the walkdowns and used the CAP process to determine functionality, deficiencies, required actions, and whether immediate action was necessary to protect the plant. The report suggests there are no issues with the effectiveness of the flood protection/mitigation features.

However, the licensee discussed the individual plant examination for external events (IPEEE) that analyzed the flooding of the NMP1 Diesel Generator Building. The IPEEE reports the flooding of the Diesel Generator Building from a PMP event would occur but does not constitute a severe accident vulnerability. Additionally, the NMP1 site is inside the NMP2 site and the NMP2 flood protective features would protect the NMP1 site as well.

#### Nine Mile Point, Unit 2

The licensee visually inspected flood protection features during the walkdowns and used the CAP process to determine functionality, deficiencies, required actions, and whether immediate action was necessary to protect the plant. The licensee also reviewed work orders to determine if stop logs were properly caulked in accordance with site procedures.

The licensee noted that three exterior doors were not equipped with weather stripping and a single door had a deteriorated seal. Further evaluation of the four doors determined that the additional water volume entering the buildings (through the doors) would have no adverse impact on equipment required for safe shutdown, and the doors could be repaired as necessary. The doors are not listed in the NMP2 UFSAR as flood protection features.

Based on the NRC staff's review, the licensee appears to have discussed the effectiveness of flood protection features as requested in the 50.54(f) letter, and is consistent with the walkdown guidance.

### 3.5 Walkdown Methodology

By letter dated June 8, 2012,<sup>8</sup> the licensee responded to the 50.54(f) letter that it intended to utilize the NRC endorsed walkdown guidelines contained in NEI 12-07, "Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features."<sup>9</sup> The licensee's walkdown submittal, dated November 27, 2012, indicated that the licensee implemented the walkdowns consistent with the intent of the guidance provided in NEI 12-07. The licensee did not identify any exceptions from NEI 12-07.

Based on the NRC staff's review, the licensee appears to have presented information related to the implementation of the walkdown process as requested in the 50.54(f) letter, and consistent with the walkdown guidance.

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<sup>8</sup> ADAMS Accession No. ML12164A369.

<sup>9</sup> ADAMS Accession No. ML12173A215.

### 3.6 Walkdown Results

#### 3.6.1 Walkdown Scope

The licensee performed walkdowns of flood protection features including the rock dike and revetment ditch system, flood control berms, culverts, railroad stop logs, and exterior walls of structures housing safety-related equipment. The licensee also performed walkdowns of exterior doors of the NMP2 site, although not part of flood protection features listed in the NMP2 UFSAR. No modes of operation or concurrent environmental conditions were considered for the walkdowns. The licensee used acceptance criteria consistent with the intent of NEI 12-07.

#### 3.6.2 Licensee Evaluation of Flood Protection Effectiveness, Key Findings, and Identified Efficiencies

The licensee performed an evaluation of the overall effectiveness of the NMP1 and NMP2 flood protection features.

NEI 12-07 defines a deficiency as follows: "a deficiency exists when a flood protection feature is unable to perform its intended function when subject to a design basis flooding hazard." The licensee generated four condition reports for NMP2, but did not identify any deficiencies at either NMP1 or NMP2 because of the flooding walkdowns.

NEI 12-07 specifies that licensees identify observations in the CAP that were not yet dispositioned at the time the walkdown report was submitted. The licensee did not identify any observations awaiting disposition at the time the walkdown report was submitted.

#### 3.6.3 Flood Protection and Mitigation Enhancements

The licensee has no plans to install flood protection or flood mitigation measures to enhance the flood protection at the NMP site.

#### 3.6.4 Planned or Newly Installed Features

The licensee determined that changes were not necessary by the flood walkdown.

#### 3.6.5 Deficiencies Noted and Actions Taken or Planned to Address

The licensee noted that no deficiencies exist at the site.

#### 3.6.6 Staff Analysis of Walkdowns

The NRC staff reviewed the licensee walkdown report dated November 27, 2012. The licensee provided an evaluation of the capability of flood protection features for the design basis flooding events including a PMF event, PMP event, and lake flooding and entered condition reports into the CAP. The licensee noted no deficiencies existed for either NMP1 or NMP2 flood protection features. The licensee did note the PMP event results in a flood elevation of 261.75, which would cause flooding of the Diesel Generator Building at NMP1. However, the licensee discussed the individual plant examination for external events (IPEEE) that analyzed the flooding of the NMP1 Diesel Generator Building. The IPEEE reports the flooding of the Diesel Generator Building from a PMP event would occur but does not constitute a severe accident vulnerability. Additionally, four condition reports were generated for NMP2 as a result of the walkdown; however, upon further evaluation, the licensee found no deficiencies at NMP2. The

licensee confirmed that preventive maintenance is being performed and is adequate. The licensee stated that there are no operational requirements for adverse hydrological events at the NMP site, however NRC staff noted that the closure of doors and hatches are part of the procedure. The licensee concluded that reasonable simulations were not applicable for the NMP site. NRC staff would have expected more detail as to why the licensee did not perform reasonable simulations on the door and hatch operations. The licensee discussed the closure of the North Security Delay Barrier Fence Gate, and provided justification for not performing a reasonable simulation of the closure. The licensee also discussed sandbag preparation and the obtaining of portable pumps. NRC staff determined that these actions would be beyond design basis and not part of the CLB flood protection based on review of the CLB.

Based on the NRC staff's review, the licensee appears to have provided results of the walkdown and described any other planned or newly installed flood protection systems or flood mitigation measures as requested in the 50.54(f) letter, and consistent with the walkdown guidance. Based on the information provided in the licensee's submittals, the staff concludes that the licensee's implementation of the walkdown process meets the intent of the walkdown guidance.

#### 3.6.7 Available Physical Margin

NRC staff issued a request for additional information (RAI) to the licensee regarding the available physical margin (APM) dated December 23, 2013<sup>10</sup>. The licensee responded with a letter dated January 31, 2014<sup>11</sup>. The licensee has reviewed their APM determination process, and entered any unknown APMs into their CAP. The staff reviewed the response, and concluded that the licensee met the intent of the APM determination per NEI 12-07.

Based on the NRC staff's review, the licensee appears to have documented the information requested for any cliff-edge effects as requested in the 50.54(f) letter and consistent with the walkdown guidance. The staff reviewed the response and concludes that the licensee met the intent of requirements of the APM determination per NEI 12-07.

### 3.7 NRC Oversight

#### Independent Verification by Resident Inspectors

On June 27, 2012, the NRC issued Temporary Instruction (TI) 2515/187<sup>12</sup> "Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns." In accordance with the TI, NRC inspectors independently verified that the NMP licensee implemented the flooding walkdowns consistent with the intent of the walkdown guidance. Additionally, the inspectors independently performed walkdowns of a sample of flood protection features. The inspection report dated February 11, 2013<sup>13</sup>, documents the results of this inspection. No findings were identified.

#### 4.0 SSCs Not Walked Down

The licensee identified inaccessible features but no restricted access features.

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<sup>10</sup> ADAMS Accession No. ML13325A891.

<sup>11</sup> ADAMS Accession No. ML14038A122.

<sup>12</sup> ADAMS Accession No. ML12129A108

<sup>13</sup> ADAMS Accession No. ML13042A062

#### 4.1 Restricted Access

No restricted access features were reported.

#### 4.2 Inaccessible Features

The licensee identified one inaccessible feature at NMP1 site. The licensee was unable to visually inspect wall/foundation interface connections and seals on any of the buildings. However, the licensee indicated these features are considered very low risk due to the construction of the interface.

Two features at NMP2 were inaccessible. They included a storm culvert drain and building wall/foundation interface. The culvert is buried approximately 15 ft. However, this culvert is assumed blocked in the design basis flooding analysis. The floors near the building wall/foundation interface were inspected and showed no signs of leakage. Additionally, the licensee considered flood entry from this interface a very low risk. No follow up walkdowns were scheduled because of inaccessible features.

#### 5.0 CONCLUSION

The NRC staff concludes that the licensee's implementation of flooding walkdown methodology meets the intent of the walkdown guidance. The staff concludes that the licensee, through the implementation of the walkdown guidance activities and in accordance with plant processes and procedures, verified the plant configuration with the current flooding licensing basis; addressed degraded, nonconforming, or unanalyzed flooding conditions; and verified the adequacy of monitoring and maintenance programs for protective features. Furthermore, the staff notes that no immediate safety concerns were identified. The staff reviewed the information provided and determined sufficient information was provided to be responsive to Enclosure 4 of the 50.54(f) letter.

M. Korsnick

- 2 -

If there are any questions, please contact me at (301) 415-3308 or email at [Bhalchandra.Vaidya@nrc.gov](mailto:Bhalchandra.Vaidya@nrc.gov).

Sincerely,  
**/RA/**

Bhalchandra Vaidya, Project Manager  
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Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos.: 50-220, and 50-410

Enclosure:  
Staff Assessment of Flooding Walkdown Report

cc w/enclosure:

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