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OPPD
Omaha Public Power District

444 South 16th Street Mall
Omaha NE 68102-2247

November 21, 2003
LIC-03-0155

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk

Reference: Docket No. 50-285

SUBJECT: Transmittal of Changes to Emergency Plan Implementing Procedures (EPIP)

In accordance with 10 CFR 50.54(q), 10 CFR 50, Appendix E, Section V, and 10 CFR 50.4(b)(5), please find EPIP change packages enclosed for the Document Control Desk (holder of Copy 165) and the NRC Region IV Plant Support Branch Secretary (holder of Copies 154 and 155).

The document update instructions and summary of changes are included on the Confirmation of Transmittal form (Form EP-1) attached to each controlled copy change package. Please return the Confirmation of Transmittal forms by January 9, 2004.

The revised documents included in the enclosed package are:
EPIP Index page 1 and 2 issued 11/13/03
EPIP TSC-2 R5 issued 11/13/03

If you have any questions regarding the enclosed changes, please contact Mr. Carl Simmons at (402)533-6430.

Sincerely,

J. B. Herman
Manager
Nuclear Licensing

JBH/ckf

Enclosures

c: NRC Region IV Plant Support Branch Secretary (2 sets)
Alan Wang, NRC Project Manager (w/o enclosures)
J. G. Kramer, NRC Senior Resident Inspector (w/o enclosures)
Emergency Planning Department (w/o enclosures)

A045

FORM EP-1
Rev. 6 (04/29/99)

OMAHA PUBLIC POWER DISTRICT

Confirmation of Transmittal for Emergency Planning Documents/Information

☐ Radiological Emergency Response Plan (RERP) ☒ Emergency Plan Implementing Procedures (EPIP) ☐ Emergency Planning Forms (EPF)

☐ Emergency Planning Department Manual (EPDM) ☐ Other Emergency Planning Document(s)/ Information

Transmitted to:

Name: Document Control Desk Copy No: 165 Date: _____
Division of Reactor Safety Copy No: 154
Attn: Senior Emergency Preparedness Inspector
Division of Reactor Safety Copy No: 155
Attn: Senior Emergency Preparedness Inspector

The following document(s) / information are forwarded for your manual:

REMOVE SECTION	INSERT SECTION
EPIP Index pages 1 through 2 issued 10/28/03	EPIP Index page 1 and 2 issued 11/13/03
EPIP-TSC-2 R4 issued 07/29/03	EPIP TSC-2 R5 issued 11/13/03

Summary of Changes:
EPIP-TSC-2 was revised to add the elevations of the Emergency Facilities.

Supervisor - Emergency Planning

I hereby acknowledge receipt of the above documents/information and have included them in my assigned manuals.
Signature: _____ **Date:** _____

Please sign above and return by 01/09/04 to:

Beth Nagel
Fort Calhoun Station, FC-2-1
Omaha Public Power District
444 South 16th Street Mall
Omaha, NE 68102-2247

NOTE: If the document(s)/information contained in this transmittal is no longer requested or needed by the recipient, or has been transferred to another individuals, please fill out the information below.

☐ Document(s)/Information No Longer Requested/Needed
☐ Document(s)/Information Transferred to:

Name: _____ Mailing Address: _____
_____

Document	Document Title	Revision/Date
EPIP-OSC-1	Emergency Classification	R35 05-02-02
EPIP-OSC-2	Command and Control Position Actions/Notifications	R42 05-28-03a
EPIP-OSC-9	Emergency Team Briefings	R7 12-09-99
EPIP-OSC-15	Communicator Actions	R22 10-24-00a
EPIP-OSC-21	Activation of the Operations Support Center	R12 10-29-02a
EPIP-TSC-1	Activation of the Technical Support Center	R24 06-19-03
EPIP-TSC-2	Catastrophic Flooding Preparations (R0 03-22-95) DELETED (05-09-95) REINSTATED	R5 11-13-03
EPIP-TSC-8	Core Damage Assessment	R15 10-28-03
EPIP-EOF-1	Activation of the Emergency Operations Facility	R13 10-29-02
EPIP-EOF-3	Offsite Monitoring	R19 07-29-03
EPIP-EOF-6	Dose Assessment	R32 01-23-02a
EPIP-EOF-7	Protective Action Guidelines	R14 04-15-03
EPIP-EOF-10	Warehouse Personnel Decontamination Station Operation	R10 01-13-00a
EPIP-EOF-11	Dosimetry Records, Exposure Extensions and Habitability	R20 07-02-03
EPIP-EOF-19	Recovery Actions	R8 07-17-03
EPIP-EOF-21	Potassium Iodide Issuance	R4 11-07-00
EPIP-EOF-23	Emergency Response Message System	R5 10-12-99
EPIP-EOF-24	EOF Backup Alert Notification System Activation	R3 09-09-99
EPIP-RR-11	Technical Support Center Director Actions	R14 02-29-00a
EPIP-RR-13	Reactor Safety Coordinator Actions	R14 12-09-99a
EPIP-RR-17	TSC Security Coordinator Actions	R15 12-10-02a
EPIP-RR-17A	TSC Administrative Logistics Coordinator Actions	R20 11-07-02a

Document	Document Title	Revision/Date
EPIP-RR-19A	Operations Liaison Actions	R6 04-15-03a
EPIP-RR-21	Operations Support Center Director Actions	R13 08-28-03
EPIP-RR-21A	Maintenance Coordinator Actions	R4 11-30-99a
EPIP-RR-22	Protective Measures Coordinator/Manager Actions	R23 09-09-03
EPIP-RR-22A	Chemistry Coordinator Actions	R6 12-07-01
EPIP-RR-25	EOF Dose Assessment Coordinator Actions	R21 05-15-03
EPIP-RR-28	OSC Accountability and Dosimetry Technician Actions	R8 09-25-01a
EPIP-RR-29	EOF Administrative Logistics Manager Actions	R20 11-07-02
EPIP-RR-39	Control Room Medical Responder Actions	R0 03-27-01a
EPIP-RR-63	EOF Dose Assessment Assistant Actions	R10 11-19-01
EPIP-RR-66	Communication Specialist Actions	R8 08-31-99
EPIP-RR-72	Field Team Specialist Actions	R13 07-09-02
EPIP-RR-87	Radiation Protection Coordinator Actions	R9 08-28-03
EPIP-RR-90	EOF/TSC CHP Communication Actions	R0 10-24-00

WP10

Distribution Authorized

This procedure does not contain any proprietary information, or such information has been censored. This issue may be released to the public document room. Proprietary information includes personnel names, company telephone numbers, and any information, which could impede emergency response.

Fort Calhoun Station
Unit No. 1

EPIP-TSC-2

EMERGENCY PLAN IMPLEMENTING PROCEDURE

Title: CATASTROPHIC FLOODING PREPARATIONS

FC-68 Number: EC 33595

Reason for Change: Add the elevations of the Emergency Facilities.

Requestor: M. Reller

Preparer: M. Reller

CATASTROPHIC FLOODING PREPARATIONS

1. PURPOSE

1.1 This procedure provides guidance and information to protect and align plant systems and resources, and to maintain decay heat removal in the event of an upstream dam burst or other causes of catastrophic flooding. As a result of a Missouri River Dam failure, a worst case flooding level as high as 1029 feet could be expected. Such an event would provide approximately 62 hours warning to prepare for the impending flooding. This guidance, therefore, will be appropriate if all normal means of decay heat removal become, or are expected to become, inoperable. This procedure in part could also be used to mitigate seismic, tornado, fire, and other events beyond the AOPs, i.e. beyond catastrophic design basis by using this procedure to fill the EFWST.

1.2 The TSC organization has lead responsibility for use of this EPIP. It is intended that implementation be a cooperative effort between the Control Room, Technical Support Center (TSC) and other emergency response facilities and resources.

2. PREREQUISITES

2.1 Notification by the Corps of Engineers or other reliable source of an upstream dam failure or the expectation of flooding above Elevation 1009 feet that would breach flood gates and sandbags and jeopardize the plant and equipment.

2.2 The plant has been shutdown, or is being shutdown per appropriate operating procedures.

3. REFERENCES/COMMITMENT DOCUMENTS

3.1 Fort Calhoun PRA IPEEE to the NRC, dated Dec 31, 1993

3.2 OP-4, Load Change and Normal Power Operation

3.3 OP-3A, Plant Shutdown

3.4 AOP-01, Acts of Nature, Section 1 - Flood

3.5 AOP-05, Emergency Shutdown

3.6 GM-RR-AE-1002, Flood Control Preparedness for Sandbagging

3.7 PE-RR-AE-1001, Floodgate Installation and Removal

3.8 PE-RR-AE-1002, Installation of Portable Steam Generator Makeup Pumps

4. DEFINITIONS

4.1 Catastrophic Flooding - flooding which is expected to rise above elevation 1009 feet.

5. PROCEDURE

NOTE: Use Attachment 6.1, Catastrophic Flood Preparation Checklist, to track progress of this procedure.

NOTE: The National Weather Service provides flooding forecasts in feet above a gauge datum near Blair (BLAN1). A gauge datum of 0.0 corresponds to an elevation of 977.58 feet.

5.1 Determine the best alignment of the electrical distribution systems to supply electrical power from the diesel generators in expectation that offsite power may be lost.

- The 161 KV switchyard building will begin flooding at elevation 1005'6".
- The west 345 KV switchyard building will begin flooding at elevation 1005'9".
- The east 345 KV switchyard building will begin flooding at elevation 1007'6".
- The air louver openings for Diesel Generator 1 will be covered at a flood elevation of 1020'6".

5.2 Request that the Control Room maintain pressurizer level at "no load" level after the plant is shut down to provide an adequate steam space for a potential Reactor Coolant System (RCS) temperature increase.

5.3 Request that the Control Room raise Steam Generator level to 100% Narrow Range in anticipation of loss of all Feedwater.

5.4 Request that the Site Director/Shift Manager authorize the installation of portable steam generator makeup pumps per PE-RR-AE-1002, Installation of Portable Steam Generator Makeup Pumps. The number of pumps required will depend upon the anticipated decay heat load. The required flow rate is equal to 110 gpm per percent full power (gpm/%).

5.5 When flooding of equipment required for shutdown cooling is imminent, ensure steam generators are available, secure shutdown cooling, and close all valves communicating directly with the RCS (e.g., HCV-348). (Suggest that HCV-348 be closed two days after shutdown to reduce the possibility of an interfacing system LOCA.)

5.6 Continue decay heat removal by feeding and steaming at least one steam generator.

NOTE: The following action will minimize the damage done by flooding and reduce the effort required to restore equipment, post-flood.

5.7 Install plant floodgates per PE-RR-AE-1001.

5.8 Perform sandbagging per GM-RR-AE-1002, Attachments 9.5 and 9.6 if desired.

5.9 Sealup outside openings in the south wall of the switchgear room.

5.10 Install hose extensions to the Fuel Oil storage tank vent stacks per GM-RR-AE-1002. (✓)

- FO-1, Diesel Generator ___
- FO-10, Auxiliary Boiler and FW-54 ___
- FO-27, Diesel Fire Pump ___

5.11 Prepare for Loss of Spent Fuel Pool Cooling

5.11.1 Equalize level between the Transfer Canal and Spent Fuel Pool.

5.11.2 Remove the gate.

5.11.3 Fill the Spent Fuel Pool and Transfer Canal.

5.11.4 Initiate plans for Spent Fuel Pool makeup, or restoration of Spent Fuel Pool Cooling, once flood waters have receded.

5.12 If loss of Auxiliary Feedwater is imminent, perform the following steps:

NOTE: A total of 220,000 gallons of water will be required to remove decay heat for 3.5 days after flooding occurs at the site.

5.12.1 Before the EFWST has lost its water inventory fill the EFWST with river water via a portable pump and then begin feeding one of the steam generators with a portable makeup pump. Reference PE-RR-AE-1002.

5.12.2 Manually open one or more Main Steam Safety Valves (MSSVs) to provide a steaming path. It is important to maintain the steam pressure as close as possible to atmospheric due to limited capability of the portable pumps.

5.13 Additional alternate protective actions may be taken as described in Attachment 6.2.

6. ATTACHMENTS

6.1 Catastrophic Flood Preparation Checklist

6.2 Alternate Actions (Optional)

Attachment 6.1 - Catastrophic Flood Preparation Checklist Page 1 of 2

(✓)

1. Upon notification of an upstream dam break, or an expected flood elevation greater than 1009 feet verify with the U.S. Army Corps of Engineers and get an estimated time of arrival of flood waters at the Fort Calhoun Station. ___

NOTE: The elevation of the TSC is 1004', EOF is 992' and the estimated elevation of the MRC in the Energy Plaza is 1050'.

2. Shutdown the plant as directed by AOP-01 prior to the impending flood, cool down and initiate shutdown cooling actions. ___

3. Adjust pressurizer level to provide an "adequate" steam space for potential temperature increases. ___

4. Prepare the portable pumps so that they are available to feed the Steam Generators after the flood crest arrives, per PE-RR-AE-1002. Stage a supply of fuel for the pumps on the Turbine Building deck, elevation 1036 feet, or in Room 81. ___

5. Prepare the electrical distribution system for a controlled loss of the 161 KV and 345 KV power supplies, and subsequent transfer to the Emergency Diesel Generators. ___

6. Prepare for a controlled loss of the 13.8 KV power supply to site facilities when flood waters reach grade level. ___

7. Direct the TSC Security Coordinator to establish contingencies for loss of the Security System. ___

8. Normal means of communication will be lost due to flood waters. Establish alternate means of communication, i.e., radios, cell phones, and portable generators (if desired), with Operations, Security, and Maintenance personnel who will remain in plant facilities prior to and throughout the flood. ___

9. Establish an Onsite Command Post near the Security Access Control Point at the top of the hill. ___

10. Coordinate the stockpiling of food and water for personnel who will remain in the plant throughout the flood. ___

11. Coordinate the removal of all valued records and equipment possible that will not be protected from the flood waters. ___

Attachment 6.1 - Catastrophic Flood Preparation Checklist Page 2 of 2

(✓)

12. Since power will not be available for forced ventilation in Room 81 or the Turbine Building, steps must be taken to preclude the buildup of carbon monoxide in these areas. Such steps could include ducting the exhaust to the outdoors or providing adequate fresh air ventilation. That could mean removing the blowout panels in Room 81 and propping open all available doors to provide ventilation through the room. The Turbine Building windows may need to be removed to allow natural air flow through that building. ___

13. Prepare for the eventual loss of power from the Emergency Diesel Generators when floodwaters begin entering the switchgear rooms and/or the diesel rooms (elevation 1011'). ___

14. Prepare for the eventual loss of Spent Fuel Pool Cooling. ___

15. Evacuate all nonessential personnel from the plant facilities by four hours prior to the flood arrival. ___

16. Raise Steam Generator levels to 100% narrow range in anticipation of loss of all Feedwater. ___

17. Isolate the Containment. ___

18. Manually OPEN MSSVs as necessary to control Steam Generator pressure. ___

19. After all Feedwater is lost, being feeding the Steam Generators with the gasoline powered portable pumps, and continue steaming Steam Generators with the MSSVs to remove decay heat. ___

20. Maintain steam generator inventory by filling to the onset of water relief, then stopping feeding for eleven hours to maintain 50% steam generator (S/G) inventory or eighteen hours to maintain 20% S/G inventory. Repeat the process. (If the S/Gs were full at the time, dryout would occur after twenty-two hours and severe core damage would occur after ten additional hours). A total of 220,000 gallons of water is needed to remove decay heat for 3.5 days after the flood arrives at the site. ___

21. Some leakage will occur from the RCS during the flood. Once the flood recedes, arrange for RCS makeup with a pump capable of pumping at about 200 psi. ___

22. Once the flood recedes, arrange for Steam Generator makeup capability since the gasoline powered pumps may not have enough lift to pull water from the river. ___

Attachment 6.2 - Alternate Actions (Optional)

1. An alternate method of protecting valuable equipment would be to "moth ball" it by applying a coating of grease, by spraying with paraffin or plastic, or by enclosure in a waterproof polyethylene or vinyl film. Equipment so protected can be submerged for considerable periods and later put back in operation with a minimum of expense compared to the cost of restoring unprotected equipment.

2. Otherwise, the motors, other vital electrical relay components, and mechanical equipment should be removed and stored above the flood level. The goal of flood proofing is loss reduction, however it is accomplished.

3. Sewers that are to be valved off should be cast iron, steel, or reinforced concrete. Storage tanks should be anchored and weighted down, to prevent flotation. Fuses and circuit breakers should be clearly marked and accessible so power can be secured to affected components if flooding begins. This will protect against fires and the loss of life due to electrical shocks.

4. Windows and vents just above and below the projected water surface should be sealed to prevent the entry of flood waters. They may also need to be reinforced.

5. The feasibility of flood proofing substantially constructed buildings shows that, in the course of time, the benefits in flood damage avoided outweighs the initial cost of flood proofing by approximately 5 to 1.