



May 8, 2007

L-PI-07-044
10 CFR 50.54(f)
GL 2007-01

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Prairie Island Nuclear Generating Plant
Units 1 and 2
Dockets 50-282 and 50-306
License Nos. DPR-42 and DPR-60

Response to NRC Generic Letter 2007-01: Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients

By letter dated February 7, 2007, the NRC issued Generic Letter (GL) 2007-01. This GL requires addressees to submit a written response within 90 days of this GL.

In accordance with the provisions of 10 CFR 50.54(f), Nuclear Management Company, LLC, (NMC) is hereby providing the response to NRC Generic Letter 2007-01: "Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients," for the Prairie Island Nuclear Generating Plant (PINGP).

Enclosure 1 to this letter provides the NMC response to NRC GL 2007-01 for PINGP.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on May 8, 2007.


Edward J. Weinkam
Director
Nuclear Licensing and Regulatory Services
Nuclear Management Company, LLC

Enclosure (1)

Document Control Desk
Page 2

cc: Administrator, Region III, USNRC
Project Manager, Prairie Island, USNRC
Resident Inspector, Prairie Island, USNRC

ENCLOSURE 1
NMC Response to NRC Generic Letter 2007-01 for PINGP:
Inaccessible or Underground Power Cable Failures that Disable Accident
Mitigation Systems or Cause Plant Transients

1.0 INTRODUCTION

NRC design criteria require that cables, which are routed underground, be capable of performing their function when subjected to anticipated environmental conditions such as moisture or flooding. Further, the design should minimize the probability of power interruption when transferring power between sources. The cable failures that could disable risk-significant equipment are expected to have monitoring programs to demonstrate that the cables can perform their safety function when called on. However, the recent industry cable failure data indicates a trend in unanticipated failures of underground/inaccessible cables that are important to safety.

Some licensees have detected cable degradation prior to failures through techniques for measuring and trending the condition of cable insulation. Licensees can assess the condition of cable insulation with reasonable confidence using one or more of the following testing techniques: partial discharge testing, time domain reflectometry, dissipation factor testing, and very low frequency AC testing. Licensees can replace faulty cables during scheduled refueling outages prior to cable failure that would challenge plant safety.

2.0 REQUESTED INFORMATION

Addressees are requested to submit the following information to NRC within 90 days of the date of this generic letter:

- (1) Provide a history of inaccessible or underground power cable failures for all cables that are within the scope of 10 CFR 50.65 (the Maintenance Rule) and for all voltage levels. Indicate the type, manufacturer, date of failure, type of service, voltage class, years of service, and the root causes for the failure.
- (2) Describe inspection, testing and monitoring programs to detect the degradation of inaccessible or underground power cables that support EDGs, offsite power, ESW, service water, component cooling water and other systems that are within the scope of 10 CFR 50.65 (the Maintenance Rule).

3.0 REQUIRED RESPONSE

In accordance with 10 CFR 50.54(f), NMC is requested to submit written responses to this generic letter. This information is sought to verify NMC's compliance with the regulatory requirements listed in the Applicable Regulatory Requirements section of the Generic Letter. The Generic Letter discusses two response options:

- 3.1 Addressees may choose to submit written response providing the information requested above within the requested time period.

ENCLOSURE 1

NMC Response to NRC Generic Letter 2007-01 for PINGP: Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients

3.2 Addressees who choose not to provide information requested or cannot meet the requested completion dates are required to submit written responses within 30 days of the date of this generic letter. The responses must address any alternative course of action proposed, including the basis for the acceptability of the proposed alternative course of action.

4.0 NMC RESPONSE FOR PRAIRIE ISLAND NUCLEAR GENERATING PLANT

NMC is providing the response as described in Option 3.1 above for PINGP.

4.1 Provide a history of inaccessible or underground power cable failures for all cables that are within the scope of 10 CFR 50.65 (The Maintenance Rule) and for all voltage levels. Indicate the type, manufacturer, date of failure, type of service, voltage class, years of service, and the root causes for the failure.

NMC Response:

History of Inaccessible/Underground Power Cable Failures at PINGP

The list of power cable failures that have occurred at PINGP for cables within the scope of the Maintenance Rule is provided in the table below:

Description	Type/Part No.	Manufacturer	Insulation/Jacket Material	Date of Failure	Type of Service	Voltage Class	Years of Service	Root Cause of Failure
Cable 24402-2 22 Circulating Water Pump	3 - 1/C 350MCM Unshielded	Okonite	EPR / NEOPRENE	9/27/2003	4.16 kV/ Continuous	5 kV	30	<u>Testing Failure:</u> Low megger reading during routine maintenance
Cable C-70 A Phase 13.8 kV Feed to Cooling Tower 13.8kV Bus CT1 (offsite source to SR busses)	6 - 1/C 1000MCM Shielded	Anaconda	EP/ NEOPRENE	8/1/2002	13.8 kV/ Continuous	15 kV	29	<u>In Service Failure:</u> Attributed to lightning strike causing rise in shield potential
Cable C-61 A Phase 13.8 kV Feed to Cooling Tower 13.8kV Bus CT2 (offsite source to SR busses)	6 - 1/C 1000MCM Shielded	Anaconda	EP/ NEOPRENE	7/26/2003	13.8 kV/ Continuous	15 kV	30	<u>In Service Failure:</u> Water intrusion between jacket and insulation migrated to pothead resulting in a ground fault. All 13.8kV feeds to Cooling Tower busses were replaced in 2005

ENCLOSURE 1

NMC Response to NRC Generic Letter 2007-01 for PINGP: Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients

- 4.2 Describe inspection, testing and monitoring programs to detect the degradation of inaccessible or underground power cables that support EDGs, offsite power, ESW, service water, component cooling water and other systems that are within the scope of 10 CFR 50.65 (The Maintenance Rule)

NMC Response:

Inspection, Testing and Monitoring Programs at PINGP

At PINGP, power cables are routinely tested under preventive maintenance procedures for their loads. As a matter of practice, motors and heaters are meggered from the bus end of their supply cables. This action allows PINGP staff to determine insulation deterioration in either the cables or the load by further testing after disconnecting the load, which eliminates the need to disconnect at the load for performing PMs.

As part of a NMC fleet initiative to enhance the site's ability to monitor underground/inaccessible power cable degradation, PINGP intends to implement an "Underground Cable Maintenance Program" by the end of 2007. This action is contained in the PINGP Corrective Action Program.