



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

April 9, 2021

Mr. Christopher P. Domingos  
Site Vice President  
Prairie Island Nuclear Generating Plant  
Northern States Power Company, Minnesota  
1717 Wakonade Drive East  
Welch, MN 55089-9642

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT—INFORMATION REQUEST  
TO SUPPORT UPCOMING TEMPORARY INSTRUCTION 2515/194  
INSPECTION; INSPECTION REPORT 05000282/2021012 AND  
05000306/2021012

Dear Mr. Domingos:

This letter is to request information to support our inspection of the Industry Initiative Associated with the Open Phase Condition Design Vulnerabilities in Electric Power Systems (U.S. Nuclear Regulatory Commission (NRC) Bulletin 2012-01) beginning Aug. 2, 2021, at your Prairie Island Nuclear Generating Plant. This inspection will be performed in accordance with the NRC Temporary Instruction 2515/194.

In order to minimize the impact that the inspection has on the site and to ensure a productive inspection, we have enclosed a list of documents requested for the inspection. Please provide this information prior to July 19, 2021. It is important that all of these documents are up to date and complete in order to minimize the number of additional documents requested during the preparation and/or the onsite portions of the inspections. Insofar as possible, this information should be provided electronically to the lead inspector.

The lead inspector for this inspection is Mr. I. Hafeez. We understand that our licensing contact for this inspection is Mr. C. Seipp of your organization. If there are any questions about the inspection or the material requested in the enclosure, please contact the lead inspector at 630-829-9843 or via e-mail at [Ijaz.Hafeez@nrc.gov](mailto:Ijaz.Hafeez@nrc.gov).

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, Control Number 3150-0011. The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget Control Number.

This letter and its enclosure 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/**

Ijaz Hafeez, Reactor Inspector  
Engineering Branch 3  
Division of Reactor Safety

Docket Nos. 05000282; 05000306  
License Nos. DPR-42; DPR-60

Enclosure:  
Document Request for Temporary  
Instruction 2515/194 Inspection

cc: Distribution via LISTSERV®

Letter to Christopher Domingos from Ijaz Hafeez dated April 9, 2021.

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TO SUPPORT UPCOMING TEMPORARY INSTRUCTION 2515/194  
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## DOCUMENT REQUEST FOR TEMPORARY INSTRUCTION 2515/194 INSPECTION

**Inspection Report:** 5000282/2021012; 05000306/2021012

**Inspection Dates:** Aug 2, 2021, through Sept. 10, 2021

**Inspection Procedures:** 2515/194-TI-2515-Phase 5

**Inspector:** Ijaz Hafeez  
630-829-9843  
[Ijaz.Hafeez@nrc.gov](mailto:Ijaz.Hafeez@nrc.gov)

Please provide the following documentation (Items 1–9) to the lead inspector prior to the onsite inspection date, preferably no later than July 19, 2021. Whenever practical, please provide copies electronically. Please provide an index of the requested documents which includes a brief description of the document and the numerical heading associated with the request (i.e., where it can be found in the list of documents requested).

1. Copies of any calculations, analyses, and/or test reports performed to support the implementation of your open phase condition (OPC) solution. If, in your implementation, OPCs are not detected and alarmed in the control room please include documentation that: (a) demonstrates the OPC will not prevent functioning of important-to-safety structures, systems, and components; and (b) detection of an OPC will occur within a short period of time (e.g., 24 hours).
2. Copies of any modification packages, including Title 10 of the *Code of Federal Regulations*, Part 50.59 evaluations if performed, used for or planned for the implementation of your OPC solution.
3. Copies of periodic maintenance, surveillance, setpoint calibration, and/or test procedures implemented or planned, for your OPC solution.
4. Copies of your licensing basis changes to Updated Final Safety Analysis Report and/or Technical Specifications, as applicable, which discuss the design features and analyses related to the effects of, and protection for, any open phase condition design vulnerability.
5. Copies of any procurement specifications and acceptance testing documents related to the installation of your OPC solution.
6. Copies of any site training the team will need to accomplish to gain access to areas with, or planned, major electrical equipment used in your OPC solution (i.e., switchyard).
7. Provide documentation showing that with an OPC occurrence and no accident condition signal present, either:
  - a. An OPC does not adversely affect the function of important-to-safety structures, systems, and components; or

Enclosure

## DOCUMENT REQUEST FOR TEMPORARY INSTRUCTION 2515/194 INSPECTION

- b. TS LCOs are maintained, or the TS actions are met without entry into TS LCO 3.0.3, and
  - i. Important-to-safety equipment is not damaged by the OPC; and
  - ii. Shutdown safety is not compromised.
- 8. With OPC occurrence and an accident condition signal present:
  - a. Provide documentation showing that automatic detection and actuation will transfer loads required to mitigate postulated accidents to an alternate source and ensure that safety functions are preserved, as required by the current licensing bases; or
  - b. Provide documentation showing that all design basis accident acceptance criteria are met with the OPC, given other plant design features. Accident assumptions must include licensing provisions associated with single failures. Typically, licensing bases will not permit consideration of the OPC as the single failure since this failure is a non-safety system.
- 9. For those licensees that opted “to demonstrate that operator manual actions will be sufficient to mitigate the impact of an OPC,” in accordance with VII, Revision 3, Attachment 1 and NEI 19-02, “Guidance for Assessing Open Phase Condition Implementation Using Risk Insights,” instead of automatic protective actions discussed in Section 03.02.b of TI 2515/194, Revision 2, provide the following:
  - a. Copies of any PRA evaluations for your plant response to an open phase condition including your Human Reliability Analysis (HRA) and sensitivity analyses; and
  - b. Procedure(s) and operator actions required to respond to an OPC alarm and potential equipment trip.

Please provide the following documentation to the team when they arrive onsite. Whenever practical, please provide copies electronically, except for drawings. Drawings should be provided as paper copies of sufficient size (ANSI “C” or “D”) such that all details are legible.

- 1. A brief presentation describing your electric power system design and typical electrical transmission and distribution system alignments; OPC design schemes installed to detect, alarm and actuate; bus transfer schemes; and maintenance and surveillance requirements. This presentation should be a general overview of your system. Please schedule the overview shortly after the entrance meeting.
- 2. Plant layout and equipment drawings for areas that identify: (a) the physical plant locations of major electrical equipment used in your open phase condition solution; and (b) the locations of detection and indication equipment used in the OPC sensing circuits.
- 3. If OPC actuation circuits are required, provide documentation that demonstrates continued coordination with the other protective devices in both the offsite electrical system (within Prairie Island Nuclear Generating Plant area of responsibility) and the onsite electrical systems.

## **DOCUMENT REQUEST FOR TEMPORARY INSTRUCTION 2515/194 INSPECTION**

4. Access to locations in which open phase condition equipment is installed or planned (i.e., switchyard, etc.).
5. Copies of documentation or testing that demonstrates your OPC solution minimizes spurious actuation or mis operation in the range of voltage imbalance normally expected in the transmission system that could cause undesired separation from an operable off-site power source.