



John P. Broschak
Vice President Engineering

February 3, 2014
ET 14-0005

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

- References:
- 1) NRC Bulletin 2012-01, dated July 27, 2012, "Design Vulnerability in Electric Power System"
 - 2) Letter CO 12-0004, dated October 25, 2012, from A. F. Stull, WCNO, to USNRC
 - 3) Letter dated December 20, 2013, from M. G. Evans, USNRC, to M. W. Sunseri, WCNO, "Wolf Creek Generating Station – Request for Additional Information Regarding Response to Bulletin 2012-01, 'Design Vulnerability in Electric Power System'"

Subject: Docket No. 50-482: Wolf Creek Nuclear Operating Corporation's Response to Request for Additional Information Regarding Response to Bulletin 2012-01, "Design Vulnerability in Electric Power System"

Gentlemen:

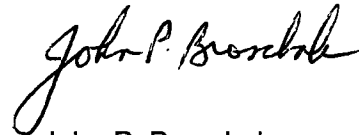
On July 27, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued NRC Bulletin 2012-01, "Design Vulnerability in Electric Power System," (Reference 1), requesting each licensee to address two issues related to its electric power systems. Reference 1 required submission of a written response within 90 days. Wolf Creek Nuclear Operating Corporation (WCNO) provided that written response in Reference 2.

Reference 3 transmitted a Request for Additional Information (RAI) from the NRC to WCNO and requested a response within 45 days from the date on that letter. The attachment to this letter provides the information requested by the RAI.

IE76
NRR

This letter contains no commitments. If you have any questions concerning this matter, please contact me at (620) 364-4085, or Mr. Michael J. Westman at (620) 364-4009.

Sincerely,

A handwritten signature in black ink, reading "John P. Broschak". The signature is written in a cursive style with a large, looping initial "J".

John P. Broschak

JPB/rlt

Attachment

cc: M. L. Dapas (NRC), w/a
C. F. Lyon (NRC), w/a
N. F. O'Keefe (NRC), w/a
Senior Resident Inspector (NRC), w/a

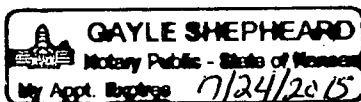
STATE OF KANSAS)
) SS
COUNTY OF COFFEY)

John P. Broschak, of lawful age, being first duly sworn upon oath says that he is Vice President Engineering of Wolf Creek Nuclear Operating Corporation; that he has read the foregoing document and knows the contents thereof; that he has executed the same for and on behalf of said Corporation with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By John P. Broschak
John P. Broschak
Vice President Engineering

SUBSCRIBED and sworn to before me this 3rd day of February, 2014.

Gayle Shephard
Notary Public



Expiration Date 7/24/2015

Response to Request for Additional Information

On July 27, 2012, the U.S. Nuclear Regulatory Commission (NRC) issued NRC Bulletin 2012-01, "Design Vulnerability in Electric Power System," requesting each licensee to address two issues related to its electric power systems. Reference 1 provided the response to Bulletin 2012-01 by Wolf Creek Nuclear Operating Corporation (WCNOC). Reference 2 transmitted a Request for Additional Information (RAI) from the NRC to WCNOC. Provided below is WCNOC's response to the questions in the RAI. The specific NRC question is provided in italics.

1. *Provide a summary of all interim corrective actions that have been taken since the January 30, 2012, event at Byron Station, Unit 2, to ensure that plant operators can promptly diagnose and respond to open phase conditions on the offsite power circuits for Class-1E vital buses until permanent corrective actions are completed.*

Response: Lessons learned from the events at Byron station were reviewed and various interim corrective actions evaluated for safety and efficiency by WCNOC. Based on the plant's offsite power configuration, electrical design details, and on lessons learned, the following actions were taken to ensure plant operators can promptly diagnose and respond to open phase conditions (OPC):

- **Interim Corrective Actions**

- Walk-downs have been performed of the switchyard to identify OPC vulnerabilities.
- Operations training has been provided to operators to ensure that they can diagnose and respond to an OPC.
- Operator rounds Check List CKL ZL-009 was revised to include specific areas identified by Engineering as areas of potential vulnerabilities for an open phase condition to occur.
- Transformer yard rounds using Check List CKL ZL-009 are performed twice daily and include general and detailed inspections of the transformers to ensure parameters are within expected limits.
- Bi-annual infrared inspections of yard equipment are being completed as part of routine inspections.
- Revised operations alarm response procedure to include appropriate responses to the phase unbalanced current flow alarm.

2. *Provide a status and schedule for completion of plant design changes and modifications to resolve issues with an open phase of electric power.*

Response: The status and schedule for completion of plant design changes are provided below:

- **Status**

- All holders of operating licenses and combined licenses for nuclear power reactors are investigating options being researched by several vendors (PSC2000, EPRI, Schweitzer, etc.) to detect OPC faults. There is currently no generic, off-the-shelf technology that has been proven to detect all the required open phase fault conditions for all plant and transformer designs.

- All holders of operating licenses and combined licenses for nuclear power reactors are fully engaged in the development of the Nuclear Energy Institute (NEI) OPC Guidance Document, as well as development of enhancements to software tools being used to analyze OPC faults.
- With the goal of ensuring accurate detection without compromising nuclear safety or increasing plant risk, this new OPC technology is being thoroughly evaluated, will be tested, and will be fully analyzed before installation.
- Vulnerability studies of OPC faults at Wolf Creek Generating Station (WCGS) have been started by WCNOG.
- **Schedule**
 - WCNOG has agreed to the generic schedule provided in the industry OPC initiative.
 - It is our intention to meet the milestones of this schedule. WCNOG currently has a purchase order in place with PCS2000 to provide an open phase detection system for the plant startup transformer, since it is the first transformer outage accommodated by the outage schedule. However, deviations may be required to accommodate outage schedules, software and hardware availability, manufacturer's delivery capabilities, licensing delays, etc.
 - Any deviation from the industry OPC initiative schedule will be documented through the deviation/exemption process addressed in the NEI OPC Guidance Document.

References:

1. WCNOG Letter CO 12-0004, "Wolf Creek Nuclear Operating Corporation 90-day Response to NRC Bulletin 2012-01, 'Design Vulnerability in Electric Power System,'" October 25, 2012. ADAMS Accession No. ML12310A196.
2. Letter from M. G. Evans, USNRC, to M. W. Sunseri, WCNOG, "Wolf Creek Generating Station – Request for Additional Information Regarding Response to Bulletin 2012-01, 'Design Vulnerability in Electric Power System' (TAC NO. ME8139)," December 20, 2013. ADAMS Accession No. ML13351A314.