



John P. Broschak  
Vice President Engineering

March 20, 2013  
ET 13-0011

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

Reference: 1) Letter ET 12-0022, dated October 18, 2012, from J. P. Broschak, WCNOC, to USNRC

2) Letter dated February 19, 2013, from C. F. Lyon, USNRC, to M. W. Sunseri, WCNOC, "Wolf Creek Generating Station – Request for Additional Information Re: Request for Deviation from Fire Protection Program Requirements for Volume Control Tank Outlet Valves (TAC NO. ME9823)"

Subject: Docket No. 50-482: Response to Request for Additional Information Regarding License Amendment Request for Deviation from Fire Protection Program Requirements for Volume Control Tank Outlet Valves

Gentlemen:

Reference 1 provided Wolf Creek Nuclear Operating Corporation's (WCNOC) request for a license amendment to revise Paragraph 2.C.(5)(a) of the renewed facility operating license and the fire protection program as described in the Updated Safety Analysis Report (USAR) to allow a deviation from the separation requirements of 10 CFR Part 50, Appendix R, Section III.G.2, as documented in Appendix 9.5E of the Wolf Creek Generating Station USAR, for the volume control tank outlet valves (BGLCV0112B and BGLCV0112C). Reference 2 provided a Nuclear Regulatory Commission (NRC) request for additional information related to the application. Attachment I provides WCNOC's response to the request for additional information.

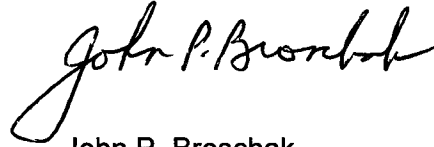
The additional information does not expand the scope of the application, and does not impact the no significant hazards consideration determination presented in Reference 1.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," a copy of this submittal is being provided to the designated Kansas State official.

ADD  
NRC

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) 364-8831 ext. 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 I – Response to Request for Additional Information

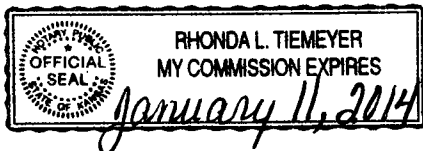
cc: E. E. Collins (NRC), w/a  
T. A. Conley (NRC), w/a  
C. F. Lyon (NRC), w/a  
N. F. O'Keefe (NRC), w/a  
Senior Resident Inspector (NRC), w/a

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 20<sup>th</sup> day of March, 2013.



Rhonda L. Tiemeyer  
Notary Public

Expiration Date January 11, 2014

### Response to Request for Additional Information

Reference 1 provided Wolf Creek Nuclear Operating Corporation's (WCNOC) request for a license amendment to revise Paragraph 2.C.(5)(a) of the renewed facility operating license and the fire protection program as described in the Updated Safety Analysis Report (USAR) to allow a deviation from the separation requirements of 10 CFR Part 50, Appendix R, Section III.G.2, as documented in Appendix 9.5E of the Wolf Creek Generating Station USAR, for the volume control tank outlet valves (BGLCV0112B and BGLCV0112C). Reference 2 provided a Nuclear Regulatory Commission (NRC) request for additional information related to the application. The specific NRC questions are provided in italics.

1. *The LAR does not provide a description of the impact on the plant for a fire in room 1318.*
  - a. *Please describe the impact on the plant and postulated scenario that requires an LAR for a fire in room 1318.*

**Response:** The postulated scenario that requires a license amendment request for a fire in room 1318 is a design basis fire in fire area A-8 that damages both redundant volume control tank (VCT) isolation valves and prevents them from closing automatically or manually (from the control room). The same fire is also postulated to affect makeup to the VCT. With an Emergency Core Cooling System (ECCS) centrifugal charging pump running and injecting into the Reactor Coolant System (RCS), this scenario causes the VCT to drain and allow hydrogen to enter the pump suction, causing damage to the pump.

As discussed on page 12 of 15 of Reference 1, a fire contained within room 1318 will not cause a loss of normal letdown. Consequently, makeup to the VCT will remain available, preventing hydrogen binding of the centrifugal charging pumps. A spurious low-low VCT level signal due to damage to BGLT0112 will initiate swapover to the Refueling Water Storage Tank (RWST) and open valve BNLCV0112D (RWST to charging header valve). If this occurs with both VCT outlet valves open a net positive suction head will be maintained on the centrifugal charging pumps because makeup to the VCT remains available and check valves in the RWST to charging header prevent the VCT from draining to the RWST.

In the event of a postulated fire in room 1318 that prevents closing one of the VCT outlet valves, post fire safe shutdown (PFSSD) is assured because makeup to the VCT remains available. Therefore, the VCT is not expected to drain and hydrogen is not expected to enter the ECCS centrifugal charging pump suction.

Based on the above discussion, a postulated fire in room 1318 will have no adverse impact on the PFSSD capability.

1. *The LAR does not provide a description of the impact on the plant for a fire in room 1318.*

b. *Please describe whether a loss of offsite power is credible for a fire in room 1318 and, if credible, summarize the impact on the plant.*

**Response:** Loss of offsite power is not credible for a fire in room 1318. Calculation XX-E-013, "Post-Fire Safe Shutdown (PFSSD) Analysis," Appendix 2, provides a loss of offsite power evaluation for fires outside the control room. The evaluation shows that a fire in fire area A-8 could cause a loss of Train 'A' offsite and onsite power but will not cause a loss of Train 'B' onsite or offsite power. Further review of cable routing data shows that none of the Train 'A' onsite and offsite power cables run in room 1318. Therefore, a fire in room 1318 will not cause a loss of either Train 'A' or Train 'B' offsite or onsite power.

1. *The LAR does not provide a description of the impact on the plant for a fire in room 1318.*

c. *In the event a fire affects both volume control tank (VCT) outlet valves (by preventing both valves from closing), please describe the operating procedures available to the control room operators to close the VCT outlet valves.*

**Response:** Upon indication of a fire, control room operators enter procedure OFN KC-016, "Fire Response." Attachment B2 of OFN KC-016 provides a list of possible fire-induced failures and mitigating operator actions in the event of a fire in fire area A-8. In the event the VCT outlet valves fail to close and makeup to the VCT is lost, operators are directed to stop the operating ECCS centrifugal charging pump, line up centrifugal charging pump suction from the RWST, stop the reactor makeup water pumps and isolate the hydrogen supply to the VCT. These actions prevent hydrogen gas binding of the operating centrifugal charging pump in cases where the VCT cannot be isolated. These actions are considered compensatory measures until approval of this license amendment request. Upon approval, the mitigating action will be revised to direct operators to line up RWST suction to the charging header and close BGLCV0112B or BGLCV0112C from the control room.

1. *The LAR does not provide a description of the impact on the plant for a fire in room 1318.*

d. *Please describe if there is a manual action to close the VCT outlet valves in the event of a fire and, if so, provide a summary of the feasibility and reliability of the manual action.*

**Response:** There are no operator manual actions (local actions, in response to a fire) to close the VCT outlet valves in the event of a fire in fire area A-8, as the outlet valves are located in the fire area of concern. Operators would have to traverse the fire-affected area to close the valve, which would not prove to be feasible or reliable. The license amendment request seeks approval of the current configuration to credit the ability to close one of the two VCT outlet valves from the control room.

As stated in the response to Question 1.c. above, upon approval of this license amendment request, a control room operator action will have the operators close both VCT outlet valves using the hand switches in the control room. This action will be identified in procedure OFN KC-016, "Fire Response."

2. *In Amendment No. 193, dated March 9, 2011 (ADAMS Accession No. ML110530183), a deviation was granted to the WCGS FPP for fire area A-8.*

- a. *Please identify all other deviations granted for area A-8.*

**Response:** There are two equipment hatches in fire area A-8 for which deviations were granted. NUREG-0881, Supplement No. 5 (Reference 3), Section 9.5.1.4, "Fire Protection for Specific Areas," states, in part:

"The auxiliary building is provided with two sets of equipment hatchways in the northern and southern ends of the auxiliary building corridors. A monorail hoist serves each set of hatchways to allow equipment to be moved from one location to another. Steel hatch covers and automatic sprinkler water curtains are provided for each hatchway at elevations 2000 ft, 2026 ft, and 2047 ft to separate the corridor fire areas.

Because of the low fuel loading and configuration of equipment in these areas, the staff finds that the water curtains and steel covers provide a level of safety equivalent to the technical requirements of Section C.5.b of BTP CMEB 9.5-1."

2. *In Amendment No. 193, dated March 9, 2011 (ADAMS Accession No. ML110530183), a deviation was granted to the WCGS FPP for fire area A-8.*

- b. *Please provide a technical justification that demonstrates that the current application will not affect the conclusion of any prior deviation for area A-8.*

**Response:** License Amendment No. 193 (Reference 4) addresses the interface designation of the pressurizer power-operated relief valves (PORVs) from high/low pressure interface to non-high/low pressure interface. Cables associated with the Train 'A' pressurizer PORV and associated block valve are run in fire area A-8. Therefore, fire area A-8 is included in the areas affected by Amendment No. 193. The NRC staff conclusions in Section 3.3 of Reference 4 state, in part:

"The removal of the PORVs and block valves as high/low pressure interface components is a reduction in the PFSSD analysis methodology contained in WCNO's PFSSD analysis. However, the defense-in-depth measures provide reasonable assurance that a fire that does occur will be limited in severity and that there is reasonable assurance that safe shutdown can be achieved."

The defense-in-depth measures provided in fire area A-8 are not affected by the current license amendment request (Reference 1). Therefore, Amendment No. 193 is not affected by Reference 1.

The license amendment request (Reference 1) does not affect the conclusion in Section 9.5.1.4 of Reference 3 regarding equipment hatch covers. The low combustible loading configuration of the equipment hatch covers and automatic suppression and detection provides an acceptable defense-in-depth approach commensurate with the area hazards. The nearest equipment hatch is located approximately 30 feet horizontally from the room 1318 door.

**References:**

1. Letter ET 12-0022, "License Amendment Request (LAR) for Deviation from Fire Protection Program Requirements – Volume Control Tank Outlet Valves," October 18, 2012. ADAMS Accession No. ML12299A312.
2. Letter from C. F. Lyon, USNRC, to M. W. Sunseri, WCNOC, "Wolf Creek Generating Station – Request for Additional Information Re: Request for Deviation from Fire Protection Program Requirements for Volume Control Tank Outlet Valves (TAC NO. ME9823)," February 19, 2013. ADAMS Accession No. ML13046A100.
3. NURE-0881, "Safety Evaluation Report related to the operation of Wolf Creek Generating Station, Unit No. 1," Supplement No. 5, March 1985.
4. Letter from B. K. Singal, USNRC, to M. W. Sunseri, WCNOC, "Wolf Creek Generating Station – Issuance of Amendment re: Removing High/Low Pressure Designation from the Pressurizer Power-Operated Relief Valves (TAC NO. ME3766)," March 9, 2011. ADAMS Accession No. ML110530183.