

WOLF CREEK NUCLEAR OPERATING CORPORATION

Stephen E. Hedges
Vice President Operations and Plant Manager

June 2, 2006
WO 06-0023

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

Subject: Docket No. 50-482: Revision to Technical Specification 3.5.2,
"ECCS - Operating"

Gentlemen:

Pursuant to 10 CFR 50.90, Wolf Creek Nuclear Operating Corporation (WCNOC) hereby requests an amendment to Facility Operating License Number NPF-42 for the Wolf Creek Generating Station (WCGS). The proposed change will revise Technical Specification (TS) 3.5.2, "ECCS – Operating," to support replacement of the containment recirculation sumps inlet trash racks and screens with strainers in response to Nuclear Regulatory Commission (NRC) Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors."

Attachments I through IV provide the Evaluation, Markup of Technical Specification Pages, Retyped Technical Specification Pages, and List of Commitments, respectively, in support of this amendment request.

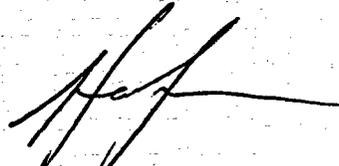
It has been determined that this amendment application does not involve a significant hazard consideration as determined per 10 CFR 50.92. The amendment application was reviewed by the WCNOC Plant Safety Review Committee. In accordance with 10 CFR 50.91, a copy of this amendment application is being provided to the designated Kansas State official.

WCNOC requests approval of this proposed License Amendment by September 15, 2006 to support final Refueling Outage 15 preparations, which is scheduled to start in October 2006. The new containment recirculation strainers will be installed during Refueling Outage 15. The amendment will be implemented prior to MODE 4 entry during startup from Refueling Outage 15.

A001

If you have any questions concerning this matter, please contact me at (620) 364-4190, or Mr. Kevin Moles at (620) 364-4126.

Very truly yours,



Stephen E. Hedges

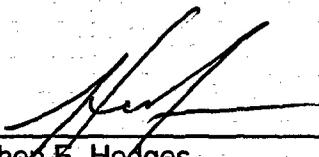
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Attachments: I - Evaluation
II - Markup of Technical Specification pages
III - Retyped Technical Specification pages
IV - List of Commitments

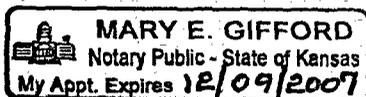
cc: T. A. Conley (KDHE), w/a
J. N. Donohew (NRC), w/a
W. B. Jones (NRC), w/a
B. S. Mallett (NRC), w/a
Senior Resident Inspector (NRC), w/a

STATE OF KANSAS)
) SS
COUNTY OF COFFEY)

Stephen E. Hedges, of lawful age, being first duly sworn upon oath says that he is Vice President Operations and Plant Manager 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 
Stephen E. Hedges
Vice President Operations and Plant Manager

SUBSCRIBED and sworn to before me this 2ND day of June, 2006.



Mary E. Gifford.
Notary Public

Expiration Date 12/09/2007

EVALUATION

1.0 DESCRIPTION

This amendment application revises Surveillance Requirement (SR) 3.5.2.8 in Technical Specification (TS) 3.5.2, "ECCS – Operating," to reflect the replacement of the containment recirculation sump suction inlet trash racks and screens with strainers. The containment recirculation sump suction inlet trash racks and screens are being replaced with a complex strainer design with significantly larger effective surface area in response to Nuclear Regulatory Commission (NRC) Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," Reference 1.

2.0 PROPOSED CHANGE

Surveillance Requirement (SR) 3.5.2.8 in Technical Specification (TS) 3.5.2, "ECCS – Operating," is revised to reflect the replacement of the containment recirculation sump suction inlet trash racks and screens with strainers.

SR 3.5.2.8 currently states:

"Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion."

SR 3.5.2.8 is revised to:

"Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet strainers show no evidence of structural distress or abnormal corrosion."

3.0 BACKGROUND

Generic Safety Issue 191 (GSI-191), "Assessment of Debris Accumulation on PWR Sump Performance," deals with the possibility that debris could accumulate on the Emergency Core Cooling System (ECCS) sump screen resulting in a loss of net positive suction head (NPSH) margin. The loss of NPSH margin to ECCS pumps drawing suction from the sump may impede or prevent the flow of water needed to meet the criteria of Title 10, Section 50.46 of the Code of Federal Regulations (10 CFR 50.46), "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors." 10 CFR 50.46 requires that licensees design their ECCS to meet five criteria, one of which is to provide the capability for long-term cooling. Following a successful system initiation, the ECCS must be able to provide cooling for a sufficient duration that the core temperature is maintained at an acceptably low value. In addition, the ECCS must be able to continue decay heat removal for the extended period of time required by the long-lived radioactivity remaining in the core.

NRC Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors," Reference 2, requested information to verify compliance with NRC regulations and to ensure that any interim risks associated with post-accident debris blockage are minimized while evaluations of the latest sump knowledge proceed. NRC Generic Letter 2004-02 is the follow-on generic communication to NRC Bulletin 2003-01 and requested information on the results of the evaluations referenced in the bulletin.

Wolf Creek Nuclear Operating Corporation (WCNOC) has evaluated the containment recirculation sumps for adverse effects due to debris blockage of flow paths necessary for ECCS and Containment Spray System recirculation and containment drainage. That evaluation concluded that in order to continue to comply with applicable regulatory requirements larger sump strainers of a different design are required. This modification is constrained by current Technical Specifications. Consequently, this amendment application is to change the Wolf Creek Generating Station (WCGS) Technical Specifications to allow plant modifications required to meet the requested schedule in NRC Generic Letter 2004-02.

4.0 TECHNICAL ANALYSIS

Wolf Creek Nuclear Operating Corporation (WCNOC) plans to install new containment recirculation sump strainers to increase the available (i.e., submerged) strainer area from less than 400 square feet currently available to an expected area of approximately 6400 square feet. The existing recirculation sump design (Reference 3) uses three screens located above the sump area. The three sump screens consist of: (1) an outer trash rack which is constructed of grating material, (2) coarse industrial wire mesh with nominal 1/2-inch openings, and (3) a fine inner screen of fine industrial wire mesh with nominal 1/8-inch openings. In addition, a 6-inch concrete curb is provided on which the sump screen is supported to prevent high density particles from entering the recirculation sump.

The new design will remove the existing screen hardware described above and replace it with new fabricated strainer assemblies utilizing the Sure-Flow™ strainer system. Inside each recirculation sump, sixteen stacks (72 total modules) of the strainer assemblies will be installed and will extend approximately 1 foot above the containment building floor. This strainer design was chosen based on the largest available sump strainer area that would fit within the bounds of the current recirculation sump area and to be compatible with anticipated water level. The new sump strainer is designed to reduce both head loss and the ingestion of debris which could affect downstream components.

The containment recirculation sump strainers are sized to preclude the passage of debris large enough to damage downstream Containment Spray System and ECCS components or block flow passages such as flow channels in the fuel and the Containment Spray System nozzles. This function is required to support operation of the supported systems during postulated accidents which credit recirculation flow from the containment recirculation sump.

Activities are currently underway to ensure that the containment recirculation sump functions under debris loading conditions at WCGS will continue to be in full compliance with the regulatory requirements listed in the Applicable Regulatory Requirements section of NRC Generic Letter 2004-02 by December 31, 2007. Full compliance will be achieved through analysis, testing, modifications to increase the available recirculation sump screen area, other

changes to the plant to reduce the potential debris loading on the installed containment recirculation sump strainers, and programmatic and process changes to ensure continued compliance.

This proposed amendment to TS SR 3.5.2.8 is necessary to reflect the new strainer design. Although the configurations of the existing trash racks and screens and the replacement sump strainer assemblies are different, they serve the same fundamental purpose of passively removing debris from the recirculation sump's suction supply of the supported system pumps. The descriptive terminology of trash racks and screens is not descriptive of the new sump strainers. The proposed replacement of "trash racks and screens" with "strainers" is a descriptive change and SR 3.5.2.8 will continue to ensure the containment recirculation sump strainers are not restricted by debris and show no evidence of structural distress or abnormal corrosion.

5.0 REGULATORY ANALYSIS

This section addresses the standards of 10 CFR 50.92 as well as the applicable regulatory requirements and acceptance criteria.

5.1 No Significant Hazards Consideration

Wolf Creek Nuclear Operating Corporation (WCNOC) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," Part 50.92(c), as discussed below:

(1) Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The consequences of accidents evaluated in the Updated Safety Analysis Report (USAR) that could be affected by the proposed change are those involving the pressurization of containment and associated flooding of the containment and recirculation of this fluid within the Emergency Core Cooling System (ECCS) or the Containment Spray System (CSS) (e.g., Loss of Coolant Accidents). The proposed change does not impact the initiation or probability of occurrence of any accident.

Although the configurations of the existing containment recirculation sump trash racks and screen and the replacement sump strainer assemblies are different, they serve the same fundamental purpose of passively removing debris from the sump's suction supply of the supported system pumps. Removal of trash racks does not impact the adequacy of the pump NPSH assumed in the safety analysis. Likewise, the change does not reduce the reliability of any supported systems or introduce any new system interactions. The greatly increased surface area of the new strainer is designed to reduce head loss and reduce the approach velocity at the strainer face significantly, decreasing the risk of impact from large debris entrained in the sump flow stream.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

(2) Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The containment recirculation sump strainers are a passive system used for accident mitigation. As such, they cannot be accident initiators. Therefore, there is no possibility that this change could create any new or different kind of accident.

No new accident scenarios, transient precursors, or limiting single failures are introduced as a result of the proposed change. There will be no adverse effect or challenges imposed on any safety related system as a result of the change. Therefore, the possibility of a new or different type of accident is not created.

There are no changes which would cause the malfunction of safety related equipment, assumed to be OPERABLE in the accident analyses, as a result of the proposed Technical Specification change. No new equipment performance burdens are imposed. The possibility of a malfunction of safety related equipment with a different result is not created.

Therefore, the proposed change does not create the possibility of a new or different accident from any accident previously evaluated.

(3) Does the proposed change involve a significant reduction in a margin of safety?

Response: No

The proposed change does not affect the acceptance criteria for any analyzed event nor is there a change to any Safety Analysis Limit (SAL). There will be no effect on the manner in which safety limits, limiting safety system settings, or limiting conditions for operation are determined nor will there be any effect on those plant systems necessary to assure the accomplishment of protection functions. The proposed change does not adversely affect the fuel, fuel cladding, Reactor Coolant System, or containment integrity. The radiological dose consequence acceptance criteria listed in the Standard Review Plan will continue to be met.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Conclusion:

Based on the above evaluation, WCNOG concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c) and, accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

The regulatory guidance documents associated with this amendment application include:

NRC regulations, 10 CFR 50.46, require that the ECCS have the capability to provide long-term cooling of the reactor core following a Loss of Coolant Accident. That is, the ECCS must be able to remove decay heat, so that the core temperature is maintained at an acceptably low value for the extended period of time required by the long-lived radioactivity remaining in the core.

The General Design Criteria (GDCs) in Appendix A to 10 CFR Part 50, GDC 38 provides requirements for containment heat removal systems, and GDC 41 provides requirements for containment atmosphere cleanup. The Containment Spray and Containment Cooling system provides containment atmosphere cooling to limit post accident pressure and temperature in containment to less than the design values. In the event of a Design Basis Accident (DBA), reduction of containment pressure and the iodine removal capability of the spray reduces the release of fission product radioactivity from containment to the environment to within limits. The Containment Spray and Containment Cooling system is designed to meet the requirements of 10 CFR 50, Appendix A, GDC 38, "Containment Heat Removal," GDC 39, "Inspection of Containment Heat Removal Systems," GDC 40, "Testing of Containment Heat Removal Systems," GDC 41, "Containment Atmosphere Cleanup," GDC 42, "Inspection of Containment Atmosphere Cleanup Systems," and GDC 43, "Testing of Containment Atmosphere Cleanup Systems," and GDC 50, "Containment Design Bases."

The containment recirculation sump strainers are sized to preclude the passage of debris large enough to damage downstream Containment Spray System and ECCS components or block flow passages such as flow channels in the fuel and the Containment Spray System nozzles. This function is required to support operation of the supported systems during postulated accidents which credit recirculation flow from the containment recirculation sump. The evaluations performed by WCNOG confirm that WCGS will continue to comply with all applicable regulatory requirements.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

WCNOG has determined that the proposed amendment would change requirements with the respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. WCNOG has evaluated the proposed amendment and has determined that the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10

CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

7.0 REFERENCES

7.1 References

1. NRC Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," September 13, 2004.
2. NRC Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors," June 9, 2003.
3. USAR Section 6.2.2 and Table 6.2.2-1.

7.2 Precedent

A similar change was approved for the Oconee Nuclear Station, Units 1 and 2 in Amendment No. 348 and 350 on November 1, 2005. These amendment revised SRs 3.5.2.6 and 3.5.3.6 to accommodate the replacement of the reactor building emergency sump suction inlet trash racks and screen with strainers.

ATTACHMENT II
MARKUP OF TECHNICAL SPECIFICATION PAGES

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY												
SR 3.5.2.5	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	18 months												
SR 3.5.2.6	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	18 months												
SR 3.5.2.7	<p>Verify, for each ECCS throttle valve listed below, each mechanical position stop is in the correct position.</p> <p style="text-align: center;"><u>Valve Number</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>EM-V0095</td> <td>EM-V0107</td> <td>EM-V0089</td> </tr> <tr> <td>EM-V0096</td> <td>EM-V0108</td> <td>EM-V0090</td> </tr> <tr> <td>EM-V0097</td> <td>EM-V0109</td> <td>EM-V0091</td> </tr> <tr> <td>EM-V0098</td> <td>EM-V0110</td> <td>EM-V0092</td> </tr> </table>	EM-V0095	EM-V0107	EM-V0089	EM-V0096	EM-V0108	EM-V0090	EM-V0097	EM-V0109	EM-V0091	EM-V0098	EM-V0110	EM-V0092	18 months
EM-V0095	EM-V0107	EM-V0089												
EM-V0096	EM-V0108	EM-V0090												
EM-V0097	EM-V0109	EM-V0091												
EM-V0098	EM-V0110	EM-V0092												
SR 3.5.2.8	<p>Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion.</p>	<p>18 months</p> <p style="text-align: right;"><i>strainers</i></p>												

ATTACHMENT III
RETYPE TECHNICAL SPECIFICATION PAGES

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY												
SR 3.5.2.5	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	18 months												
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SR 3.5.2.7	<p>Verify, for each ECCS throttle valve listed below, each mechanical position stop is in the correct position.</p> <p style="text-align: center;"><u>Valve Number</u></p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>EM-V0095</td> <td>EM-V0107</td> <td>EM-V0089</td> </tr> <tr> <td>EM-V0096</td> <td>EM-V0108</td> <td>EM-V0090</td> </tr> <tr> <td>EM-V0097</td> <td>EM-V0109</td> <td>EM-V0091</td> </tr> <tr> <td>EM-V0098</td> <td>EM-V0110</td> <td>EM-V0092</td> </tr> </table>	EM-V0095	EM-V0107	EM-V0089	EM-V0096	EM-V0108	EM-V0090	EM-V0097	EM-V0109	EM-V0091	EM-V0098	EM-V0110	EM-V0092	18 months
EM-V0095	EM-V0107	EM-V0089												
EM-V0096	EM-V0108	EM-V0090												
EM-V0097	EM-V0109	EM-V0091												
EM-V0098	EM-V0110	EM-V0092												
SR 3.5.2.8	Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet strainers show no evidence of structural distress or abnormal corrosion.	18 months												

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.3 ECCS -Shutdown

LCO 3.5.3 One ECCS train shall be OPERABLE.

NOTE

An RHR subsystem may be considered OPERABLE during alignment and operation for decay heat removal, if capable of being manually realigned to the ECCS mode of operation.

APPLICABILITY: MODE 4.

ACTIONS

NOTE

LCO 3.0.4b. is not applicable to ECCS centrifugal charging pump subsystem.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required ECCS residual heat removal (RHR) subsystem inoperable.	A.1 Initiate action to restore required ECCS RHR subsystem to OPERABLE status.	Immediately
B. Required ECCS centrifugal charging pump (CCP) subsystem inoperable.	B.1 Restore required ECCS CCP subsystem to OPERABLE status.	1 hour
C. Required Action and associated Completion Time of Condition B not met.	C.1 Be in MODE 5.	24 hours

LIST OF COMMITMENTS

The following table identifies those actions committed to by WCNOC in this document. Any other statements in this submittal are provided for information purposes and are not considered to be commitments. Please direct questions regarding these commitments to Mr. Kevin Moles at (620) 364-4126.

COMMITMENT	Due Date/Event
The amendment will be implemented prior to MODE 4 entry during startup from Refueling Outage 15.	Prior to MODE 4 entry during startup from Refueling Outage 15