WOLF CREEK
NUCLEAR OPERATING CORPORATION

Robert C. Hagan
Vice President Engineering

October 18, 1995

ET 95-0080

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-137
Washington, D. C. 20555

Subject: Docket No. 50-482: Revision to Technical Specification 3/4.8.1.1 and 3/4.8.1.2

Gentlemen:

This letter transmits an application for amendment to Facility Operating License No. NPF-42 for Wolf Creek Generating Station (WCGS). This license amendment request proposes replacing the current fuel oil volume requirement in the emergency diesel generator (EDG) day tank in Technical Specifications 3.8.1.1.b.1) and 3.8.1.2.b.1) with a fuel oil level requirement. Associated Surveillance Requirement 4.8.1.1.2.a.1) will also be changed to replace the visual check requirement on fuel oil level in the day tank with a requirement to verify that the fuel oil transfer pump starts on low level in the day tank standpipe.

Attachment I provides a Safety Evaluation including a description of the proposed change. Attachment II provides a No Significant Hazards Consideration Determination and Attachment III provides an Environmental Impact Determination. The specific changes to the technical specifications proposed by this request are provided in Attachment IV.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated Kansas State official. This proposed revision to the WCGS Technical Specifications will be fully implemented prior to startup from the eighth refueling outage, following formal Nuclear Regulatory Commission approval.

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If you have any questions concerning this matter, please contact me at (316) 364-8831, extension 4553, or Mr. Richard D. Flannigan, at extension 4500.

Very truly yours,

Robert C. Hagan

Robert C. Hagan

RCH/jra

Attachments I - Safety Evaluation
II - No Significant Hazards Consideration Determination
III - Environmental Impact Determination
IV - Proposed Technical Specification Change

cc: G. W. Allen (KDHE), w/a
L. J. Callan (NRC), w/a
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J. C. Stone (NRC), w/a

STATE OF KANSAS)
) SS
COUNTY OF COFFEY)

Robert C. Hagan, 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 content thereof; that he has executed that 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.

ANGELA E. WESSEL
Notary Public - State of Kansas
My Appt. Expires 07-03-99

By Robert C. Hagan
Robert C. Hagan
Vice President
Engineering

SUBSCRIBED and sworn to before me this 18th day of Oct. , 1995.

Angela E. Wessel
Notary Public

Expiration Date July 3, 1999

ATTACHMENT I

SAFETY EVALUATION

Safety Evaluation

Proposed Change

This license amendment request proposes to revise Technical Specifications 3.8.1.1 (AC Sources Operating) and 3.8.1.2 (AC Sources Shutdown). This revision will change Specifications 3/4.8.1.1.b.1) and 3.8.1.2.b.1) to replace the current fuel oil volume requirement of 510 gallons with a requirement for a minimum fuel oil free surface elevation of 86 inches from the bottom (outside diameter) of the day tank. In addition, Surveillance Requirement 4.8.1.1.2.a.1) will be changed to require verification that the fuel oil transfer pump starts on low level in the day tank standpipe.

Background

Wolf Creek Generating Station (WCGS) Technical Specifications 3/4.8.1.1 and 3/4.8.1.2 currently specify a minimum diesel fuel oil volume of 510 gallons for the emergency diesel generator (EDG) day tanks. This is the calculated amount of fuel required to satisfy ANSI N195-1976, which requires that the day tank contain enough fuel oil to enable the EDG to run for one hour at full-load plus a 10% margin. This volume was changed in Amendment 82 to the WCGS Technical Specifications, after an error was identified in the original Bechtel calculation and the corrected calculation indicated that 510 gallons is the correct amount of fuel needed to satisfy the ANSI requirement.

During the engineering and technical support team inspection conducted at WCGS on April 24-28 and May 8-12, 1995 by the NRC, the inspectors noted that the 510 gallon limit specified in Technical Specification 3.8.1.1.b.1) did not represent the most limiting operability requirement (for fuel oil) required for the EDGs. The inspectors indicated that the most limiting operability requirement (for fuel oil) for the EDGs was the 12 second start requirement (see discussion below) in Technical Specification 4.8.1.1.2.a.4). At the time it was Wolf Creek Nuclear Operating Corporation's (WCNOC's) position that the original intent of the tank volume requirement of Technical Specification 3/4.8.1.1 and 3/4.8.1.2 is to ensure the one-hour run at full load plus 10% requirement of ANSI N195-1976 is satisfied. However, WCNOC agreed to look further into the issue.

Subsequently, WCNOC Engineering and Management discussed this concern, and clarified EDG operating requirements with the EDG vendor, Colt-Fairbanks Morse. Based on discussions with Colt-Fairbanks Morse representatives and further design reviews, WCNOC concurred with the position taken by the NRC inspectors, as discussed in NRC Inspection Report 50-482/95-07, dated June 30, 1995. As discussed below, it was determined that the minimum required day tank fuel oil level should be changed to 86 inches above the bottom of the day tank. Provided below is a description of the fuel oil system and analysis of the proposed change.

System Description

The emergency diesel generator fuel oil day tanks are the suction sources for the engine driven fuel oil pumps on the EDGs. The day tanks are sized to

supply a minimum of one hour's worth of fuel for the EDGs with the diesels running at their continuous rating plus a 10 percent margin (see ANSI N195-1976, "Fuel Oil Systems for Standby Diesel-Generators"). WCNOC believes this is equivalent to the NUREG-1431, "Standard Technical Specifications Westinghouse Plants," Bases for Surveillance Requirement (SR) 3.8.1.4, which states that the level of fuel oil is to be verified to be at or above the level at which fuel oil is automatically added (to the tank), and is selected to ensure adequate fuel oil for a minimum of 1 hour of DG operation at full load plus 10%.

Early in the design phase for the WCGS, it was discovered that the EDG injection headers were located at an elevation above that of the day tanks. This would have caused the headers to not remain full in the standby mode. It was determined at the time, and recently verified with representatives from the EDG vendor, Colt-Fairbanks Morse, that the diesel can be depended upon to meet its design function as long as the supply piping to the injector pumps remains full at all times. Maintaining the day tank fuel oil level above the highest component in the engine fuel oil system will result in a positive pressure being applied throughout the system. Any system fuel oil volume loss, whether by temperature shrinkage or by minor system leakage, will be made up by backflow through the return line submerged in the day tank. This will assure the entire fuel oil system will be maintained full at all times. Minor fuel oil system leakage will be visibly apparent by observation without resulting in failure of the engine to perform its function. Non-filled headers could render the EDGs inoperable by preventing them from starting in the required 12 seconds (per Technical Specification 4.8.1.1.2.a.4). It was decided at the time to add standpipes to the day tanks, which allowed the day tank level to be raised above the elevation of the injection headers, thus preventing the headers from draining back to the day tank.

The transfer pumps located in the EDG fuel oil storage tanks start on low level and stop on high level via level transmitters installed on the day tanks. The current pump start/stop setpoints are administratively controlled to ensure that the fuel oil level is maintained in the standpipe. This ensures that the day tank level is normally maintained higher than the elevation of the headers, thus ensuring that the day tanks contain sufficient fuel to meet both the 510 gallon minimum and the 12 second start requirements. (Note: The 510 gallon requirement is a volume limit based on the amount of fuel required to meet a defined engine run time. The 86 inch level requirement is based on a fuel elevation requirement due to the physical layout of the fuel oil system. Due to the design of the standpipe system the 86 inch level corresponds to an amount of fuel oil greater than 510 gallons. However, it is the elevation of the fuel oil that is needed to meet the 12 second start requirement, not a greater amount of fuel oil.).

As indicated in our original submittal requesting the fuel oil volume be changed to 510 gallons (Amendment 82 to WCGS Technical Specifications), EDG operability was not affected by the incorrect volume requirement, because since commercial operation the day tanks have been administratively kept filled to a level in the standpipe in order to meet the 12 second start requirement, as discussed above.

The proposed technical specification level limit was determined by measuring the elevation at the top of the fitting on the engine fuel oil accumulators,

which is the highest point in the system. This resulted in an elevation of 2011.40 feet. Based upon the physical layout of the EDG fuel oil system, this equates to a level of 86 inches from the bottom of the day tank. This limit would be required only when the EDG is in standby, to ensure the EDG fuel oil supply piping is maintained full to allow the EDG to start and load within 12 seconds. Once the EDG has started and is running, the need for the 12-second start requirement ceases, and the day tank minimum level requirement would then be the minimum 510 gallons needed to satisfy the ANSI N195-1976 requirement (running the EDG at full load plus 10 percent).

As indicated above, the basis for the proposed level limit is to assure the engine fuel oil supply piping, including the injector pump and injection headers, is maintained full of fuel oil at all times during standby operation, specifically under conditions of fuel shrinkage with temperature decreases and minor engine fuel oil system leakage. This assures the engine will be able to start and load within the required time period (i.e., within 12 seconds) of receipt of a start signal. This limit is only applicable during standby operation. During engine operation, the engine driven fuel oil pump continuously recirculates fuel oil with the excess flowing back to the day tank, thereby keeping the system filled. This level is above the current minimum fuel oil volume limit of 510 gallons. In addition, the fuel oil transfer pump will start on low (standpipe) level, and refill the day tank to the pump shutoff setpoint, thus ensuring the day tank level will not drop below 510 gallons during EDG operation.

A plant modification is scheduled to be implemented during the eighth refueling outage. This modification will change the fuel oil transfer pump control logic such that, when the EDG is operating, the transfer pump will start at the low level setpoint (the proposed limit change of 86 inches above the bottom of the day tank) and run continuously as long as the EDG is running. Since the transfer pump capacity is greater than the fuel consumption rate of the EDG, the day tank would be maintained full, with the excess fuel being recirculated back to the storage tank through the day tank overflow line. With the EDG in standby mode, the transfer pump would be set to fill the day tank to the tank high level limit, then shut off.

As part of this proposed change Surveillance Requirement 4.8.1.1.2.a.1) would be replaced with a requirement to verify that the fuel oil transfer pump starts on low level in the day tank standpipe. Transfer pump operation and day tank level are indicated in the control room and can be monitored continuously. Also, low day tank level is annunciated in the control room. These level transmitters' setpoints will be changed to reflect the proposed level change. Using this instrumentation, verification that the transfer pump starts on low tank level (the proposed level change) will ensure that the tank level is being maintained at or above the setpoint for pump operation.

Implementation of the plant modification described above will require the plant to be shutdown. Thus, WCNOC requests that the implementation date for this proposed amendment be scheduled for prior to startup from the eighth refueling outage. Until then, WCNOC will continue to administratively maintain the level of fuel oil in the day tanks' standpipes.

Safety Evaluation

The proposed changes to Technical Specifications 3/4.8.1.1 , 3/4.8.1.2 and 4.8.1.1.2.a.1 do not involve an unreviewed safety question because operation of the WCGS with these changes would not:

1. Increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report. These changes do not affect the ability of the EDGs or the EDG fuel oil system to perform their intended safety function. The requested changes increase the technical specification required minimum amount of fuel oil to be maintained in the day tanks, and change the units of the required amount from a volume (gallons) to a level (inches above tank bottom) requirement. However, this increased amount has been administratively maintained by WCNOC since the beginning of commercial operation and thus is not an operability concern for the EDGs.

2. Create a possibility for an accident or malfunction of a different type than previously evaluated in the safety analysis report. There is no new type of accident or malfunction being created and the method and manner of plant operation remains unchanged. The change corrects the minimum required day tank storage level specified in the technical specifications using the most conservative factors for determining this level. The change in the surveillance requirement more accurately reflects the surveillance method used to assure tank level is being properly maintained, and does not represent a change in the manner of plant or system operation.

3. Reduce the margin of safety as defined in the bases for any Technical Specification. This is based on the fact that, since commercial operation, the day tank fuel oil level has been administratively maintained at the level being proposed in this change, and that level fulfills the requirements of both ANSI N195-1976 and Regulatory Guide 1.137. Changing the technical specifications to reflect the new day tank fuel oil level limit will not affect any plant safety limit settings and will help ensure the EDGs will meet the requirements of ANSI N195-1976 and Regulatory Guide 1.137.

Based on the above discussions and the no significant hazards consideration determination presented in Attachment II, the proposed change does not increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report; or create the possibility for an accident or a malfunction of a different type than any previously evaluated in the safety analysis report; or reduce the margin of safety as defined in the basis for any technical specification. Therefore, the proposed change does not adversely affect or endanger the health or safety of the general public or involve a significant safety hazard.

ATTACHMENT II

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

No Significant Hazards Consideration Determination

This license amendment request proposes to revise Technical Specifications 3/4.8.1.1.b.1) and 3.8.1.2.b.1) to replace the current fuel oil volume requirement of 510 gallons with a requirement for a minimum fuel oil free surface elevation of 86 inches from the bottom (outside diameter) of the tank. In addition, Surveillance Requirement 4.8.1.1.2.a.1) will be changed to require verification that the fuel oil transfer pump starts on low level in the day tank standpipe.

Standard I - Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated

The proposed change will increase the minimum amount of diesel fuel oil that the current specifications require to be maintained in the EDG day tanks for standby operation. This change reflects the level that has been administratively maintained since the beginning of plant operation. The proposed change will not affect the way the EDG is operated and does not affect the ability of the EDGs to perform their safety function. The surveillance requirement change is being made to more thoroughly reflect the method used to assure the tank level is being properly maintained. The proposed change will not require the EDG to be operated in a manner different than that for which it was designed. Therefore, the proposed change will not significantly increase the consequences of an accident or malfunction of equipment important to safety previously evaluated in the USAR.

Standard II - Create the Possibility of a New or Different Kind of Accident from any Previously Evaluated

There are no active components being added whose failure could prevent the EDG from functioning. There is no new type of accident or malfunction being created and the method and manner of plant operation remains unchanged. The safety design bases in the USAR have not been altered. Thus, this change does not create the possibility of a new or different kind of accident from any previously evaluated.

No new or different accident scenarios, transient precursors, failure mechanisms, or limiting single failures will be introduced as a result of these changes. The method of operation of the EDGs is not being altered, and the fuel oil transfer pumps will continue to perform the same function they currently perform. Therefore, the possibility of a new or different kind of accident other than those already evaluated will not be created by this change.

Standard III - Involve a Significant Reduction in the Margin of Safety

There are no changes being made to any safety limits or safety system settings that would adversely impact plant safety. Although the minimum required amount of fuel oil specified in the Technical Specifications is

being revised, this amount of fuel oil has been administratively controlled since the beginning of commercial operation. Thus, the operability of the emergency diesel generators has never been affected by this issue. Neither the method of operation of the EDGs nor their safety function are being altered by the proposed change. Therefore, the proposed change would not result in a reduction in a margin of safety.

Based on the above discussions, it has been determined that the requested technical specification change does not involve a significant increase in the probability or consequences of an accident or other adverse condition over previous evaluations; or create the possibility of a new or different kind of accident or condition over previous evaluations; or involve a significant reduction in a margin of safety. Therefore, the requested license amendment does not involve a significant hazards consideration.

ATTACHMENT III

ENVIRONMENTAL IMPACT DETERMINATION

Environmental Impact Determination

This amendment request meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) as specified below:

(i) the amendment involves no significant hazards consideration

As demonstrated in Attachment II, the proposed changes do not involve any significant hazards consideration.

(ii) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite

The proposed changes do not involve a change to the facility or operating procedures which would create new types of effluents. The proposed change in the technical specification required minimum day tank fuel oil level, and the change in the surveillance procedure, will not affect system performance or operation. Therefore, all offsite and control room doses will remain within the limits of 10 CFR 100 and 10 CFR 50 Appendix A, General Design Criteria 19.

(iii) there is no significant increase in individual or cumulative occupation radiation exposure

The proposed changes affect only the technical specification required amount of fuel oil to be maintained in the day tanks and the method of surveillance to ensure this amount is maintained. These changes do not affect any radioactive systems, and the new surveillance procedure can be performed in conjunction with similar surveillance requirements currently performed on the emergency diesel generators. Thus, these changes will not result in a significant increase in individual or cumulative occupational radiation exposure.

Based on the above, it is concluded that there will be no impact on the environment resulting from the proposed changes and that the proposed changes meet the criteria specified in 10 CFR 51.22 for a categorical exclusion from the requirements of 10 CFR 51.21 relative to requiring a specific environmental assessment by the Commission.

ATTACHMENT IV

PROPOSED TECHNICAL SPECIFICATION CHANGE