WOLF CREEK
NUCLEAR OPERATING CORPORATION

Robert C. Hagan
Vice President Nuclear Assurance

March 8, 1993

NA 93-0076

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 Section 3.3.3.7 - Chlorine Detection System

Gentlemen:

This letter transmits an application for amendment to Facility Operating License No. NPF-42 for the Wolf Creek Generating Station (WCGS). This license amendment request proposes a revision to delete Technical Specification Section 3.3.3.7, Chlorine Detection Systems, and the associated Bases as a result of a future plant modification to remove the one-ton chlorine storage containers from the site. This modification is scheduled for implementation by October 1, 1993. Upon NRC approval, and upon removal of the one-ton chlorine storage containers from the site this proposed change would be made effective.

Attachment I provides a safety evaluation along with a detailed 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 and Bases 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.

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If you have any questions concerning this matter, please contact me at (316)364-8831 Ext. 4553 or Mr. Kevin J. Moles of my staff at Ext. 4565.

Very truly yours,

Robert C. Hagan

Robert C. Hagan
Vice President
Nuclear Assurance

RCH/jra

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

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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 Nuclear Assurance 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.

By Robert C. Hagan
Robert C. Hagan
Vice President
Nuclear Assurance


SUBSCRIBED and sworn to before me this 8TH day of MARCH, 1993.

Mary E. Gifford
Notary Public

Expiration Date 12/09/93 5 mee 05/08/93

# Attachment I
# Safety Evaluation

# Safety Evaluation

## Description of Proposed Change

The proposed change would delete Technical Specification 3.3.3.7, chlorine detection systems, and the associated Bases.

## Background

Chlorine gas is used at Wolf Creek Generating Station (WCGS) for the control of biological growth in the essential service water system (ESWS), the circulating water and service water systems, and for treatment of the intake supply to the makeup demineralizer and potable water systems.

Chlorine is stored at the ESWS pumphouse and the circulating water screenhouse in one-ton storage containers and at the Shop Building chlorine house in 150 lb. containers. The ESWS pumphouse is located approximately 2,100 feet from the control room normal air intakes. The circulating water screenhouse is approximately 1,900 feet from the control room normal air intakes, and the Shop Building chlorine house is about 550 feet from the control room normal air intakes.

In accordance with Regulatory Guide 1.95, "Protection of Nuclear Plant Control Room Operators Against an Accidental Chlorine Release," an analysis of the worst case chlorine release at WCGS was performed as discussed in Updated Safety Analysis Report (USAR), Section 2.2.3.1.7. The circulating water screenhouse is closer to the control room normal air intakes of the two structures with one-ton chlorine storage containers. However, the worst case is a one-ton container release at the ESWS pumphouse because the diffusion of the chlorine cloud is very sensitive to height. The Regulatory Guide indicates that automatic isolation of the control room ventilation system is necessary if single container quantities of chlorine exceed 150 lb or a single failure could release more than 150 lb. In the USAR analysis of the chlorine release event, credit was taken for the redundant chlorine detectors in the control room air intake to automatically isolate the control room ventilation system.

## Reason for the Proposed Change

A plant modification is scheduled after the sixth refueling outage to remove all one-ton chlorine containers from the WCGS site. Control of biological growth in the ESWS and circulating water and service water systems will be performed using methods that do not employ chlorine gas, such as bromination. After the one-ton containers have been removed, the remaining chlorine gas on site will be the 150 lb. containers in the Shop Building chlorine house.

The operating procedures for the chlorination system in the Shop Building chlorine house currently restrict the number of 150 lb. containers that can be connected to the system to one at a time. However, future operation may allow two 150 lb. containers to be connected such that any single failure would still limit the accidental release to one container or 150 lb. Therefore, in the event of an accidental release, the maximum quantity of chlorine involved would be 150 lb. Because the release is limited to 150 lb. and the release location is greater than 100 meters from the control room, manual isolation of the control room ventilation system is adequate for this postulated event per Regulatory Guide 1.95 guidelines.

In accordance with the above discussion, once the one-ton containers are removed from the site, the chlorine detection system technical specifications could be deleted.

**Evaluation of Proposed Change**

The chlorine detectors in the control room air intake duct provide protection to the control room operators in the event of a worst case chlorine release accident. USAR Section 2.2.3.1.7 defines the worst case as an event involving a one-ton chlorine container. In accordance with Regulatory Guide 1.95, release from a one-ton container requires automatic control room ventilation system isolation initiated by the chlorine detectors. After the one-ton containers have been removed from the site, the potential chlorine release accident would involve one 150 lb. container in the Shop Building chlorine house. This event was considered in WCGS USAR Section 2.2 and Table 6.4-2; however, no analysis was performed because, 1) Regulatory Guide 1.95, Section C.2, specifically addressed this scenario and indicated that manual isolation of the control room was acceptable and 2) only the worst case potential accident was analyzed.

The proposed technical specification change to delete the chlorine detection system applicability requirement would not result in a reduction in protection for the control room operators since the criteria of Regulatory Guide 1.95 would be met by manual isolation of the control room ventilation system.

Based on the above evaluation, the proposed change would maintain a level of plant safety equivalent to that when the original technical specification for chlorine detection systems became part of the WCGS operating license.

# Attachment II

## No Significant Hazards Consideration Determination

## No Significant Hazards Consideration Determination

The proposed change has been reviewed against the standards provided in 10 CFR 50.92. Each standard is discussed below.

**Standard 1 - Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated**

The proposed change involves deletion of the chlorine detection system technical specification based on a plant modification to remove the one-ton chlorine storage containers from the site. Therefore, there would be no increase in the probability of a chlorine release event. The worst case scenario per USAR Section 2.2.3.1.7 is eliminated by this change. Release of chlorine from a 150 lb. container at a distance of 100 meters or more from the control room normal air intake will not impair the control room operators before manual isolation of the ventilation system could be performed per Regulatory Guide 1.95. Therefore, the change would not involve an increase in the consequences of a chlorine release event.

**Standard 2 - Create the Possibility of a New or Different Kind of Accident from Any Previously Evaluated**

The proposed change involves only the deletion of the chlorine detection system technical specifications based on a plant modification to remove the one-ton chlorine storage containers from the site. The release of 150 lbs. of chlorine from the Shop Building is bounded by Regulatory Guide 1.95, Section C.2 in that manual isolation capability for the control room ventilation system is acceptable. Therefore, the proposed change would not create the possibility of a new or different kind of accident from any previously evaluated.

**Standard 3 - Involve a Significant Reduction in the Margin of Safety**

The proposed change would not alter the margins of safety provided in the existing USAR analysis for chlorine release events since the basis for the existing margin of safety, which are the Regulatory Guide 1.95 requirements, would not be altered by the change. The Regulatory Guide defines design requirements for chlorine release mitigation systems under various conditions of chlorine quantity and location (distance from the control room normal air intake) of chlorine storage/use areas. The proposed change to delete Technical Specification 3.3.3.7 would not result in a condition that conflicts with the Regulatory Guide. In fact by eliminating the 1-ton chlorine containers, this actually increases the margin of safety. Therefore, the proposed change would not involve a significant reduction in the margin of safety.

Based on the above, it is concluded that the proposed technical specification change does not involve a significant hazards consideration.

# Attachment III

## Environmental Impact Determination

## Environmental Impact Determination

10 CFR 51.22(b) specifies the criteria for categorical exclusions from the requirements for a specific environmental assessment per 10 CFR 51.21. This amendment request meets the criteria specified in 10 CFR 51.22(c)(9). The specific criteria contained in this section are discussed below.

**(i) the amendment involves no significant hazards consideration**

As demonstrated in the Significant Hazards Consideration Determination in Attachment II, the requested license amendment does 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 off-site**

The proposed license amendment involves no change in the manner of operation of any plant systems involving the generation, collection or processing of radioactive materials. The toxicity of plant effluents affected by the proposed change to use bromine versus chlorine will be somewhat reduced. Therefore, no increase in the amounts of effluents or significant change in the types of effluents would be created.

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

The requested license amendment involves no change in the manner of operation of any plant systems involving the generation, collection or processing of radioactive materials. Furthermore, implementation of this proposed change will not involve work activities which could contribute to occupational radiation exposure. Therefore, there will be no increase in individual or cumulative occupational radiation exposure associated with this proposed change.

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