

WOLF CREEK

NUCLEAR OPERATING CORPORATION

Kevin J. Moles
Manager Regulatory Affairs

March 8, 2005
RA 05-0038

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

Subject: Docket No. 50-482: Wolf Creek Generating Station Biennial 50.59
Evaluation Report

Gentlemen:

This letter transmits the Biennial 50.59 Evaluation Report for Wolf Creek Generating Station (WCGS), which is being submitted pursuant to 10 CFR 50.59(d)(2). The attachment provides the WCGS Biennial 50.59 Evaluation Report including a summary of the evaluation results.

This report covers the period from January 1, 2003, to December 31, 2004, and contains a summary of 50.59 evaluations performed during this period that were approved by the WCGS onsite review committee.

There are no commitments contained in this correspondence.

If you have any questions concerning this matter, please contact me at (620) 364-4126, or Diane Hooper at (620) 364-4041.

Very truly yours,



Kevin J. Moles

KJM/rlg

Attachment

cc: J. N. Donohew (NRC), w/a
D. N. Graves (NRC), w/a
B. S. Mallett (NRC), w/a
Senior Resident Inspector (NRC), w/a

JE47

WOLF CREEK NUCLEAR OPERATING CORPORATION

Wolf Creek Generating Station

Docket No.: 50-482

Facility Operating License No.: NPF-42

BIENNIAL 50.59 EVALUATION REPORT

Report No.: 19

Reporting Period: January 1, 2003 through December 31, 2004

SUMMARY

This report provides a brief description of changes, tests, and experiments performed at Wolf Creek Generation Station (WCGS) and evaluated pursuant to 10 CFR 50.59(c)(1). This report includes summaries of the associated 50.59 evaluations that were reviewed and found to be acceptable by the Plant Safety Review Committee (PSRC) for the period beginning January 1, 2003 and ending December 31, 2004. This report is submitted in accordance with the requirements of 10 CFR 50.59(d)(2).

On the basis of these evaluations of changes:

- There is less than a minimal increase in the frequency of occurrence of an accident previously evaluated in the Updated Final Safety Analysis Report (USAR).
- There is less than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the USAR.
- There is less than a minimal increase in the consequences of an accident previously evaluated in the USAR.
- There is less than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the USAR.
- There is no possibility for an accident of a different type than any previously evaluated in the USAR being created.
- There is no possibility for a malfunction of a SSC important to safety with a different result than any previously evaluated in the USAR being created.
- There is no result in a design basis limit for a fission product barrier as described in the USAR being exceeded or altered.
- There is no result in a departure from a method of evaluation described in the USAR used in establishing the design bases or in the safety analyses.

Therefore, all items contained within this report have been determined not to require a license amendment.

Evaluation Number: 59 2003-0001 Revision: 0
Title: Replacement of single phase transformers, XPN07A, B, & C and XPN08A, B, & C with a commercial grade three phase transformer

Activity Description:

Due to the inherent design of safety related Class 1E transformers (XPN07A, B, C and XPN08A, B, C) the transformer windings are overheating and eventually catching fire. To eliminate the fire hazard, the transformers are being downgraded to non-Class 1E and using replacement transformers of a different design in conjunction with a voltage regulator. This change clarifies the intent of compliance to the requirements of Regulatory Guide 1.75. The design and licensing basis for this electrical power circuit is defined in Updated Safety Analysis Report (USAR) sections 3A and 8.1.4.3. The Class 1E/Non-Class 1E isolation device and the boundary will be redefined based on a use of the existing two Class 1E circuit breakers connected in series. The new definition of the isolation device complies with IEEE 384.

50.59 Evaluation:

Two sets of three single-phase safety related transformers are each being replaced with one, three phase commercial grade transformer (XPN07A and XPN08A) each of suitable capacity. As a result of this change, the isolation device and the Class 1E boundary for circuits involving transformers will be redefined. Two independent safety-related and physically separated breakers are being relied upon to isolate the Non-Class 1E load from the Class 1E power supply. The trip settings for these breakers have been coordinated with the load center breakers that feed the motor control center to ensure that the supply breakers will trip before the feed breaker. Such power circuit isolation configuration is accepted by IEEE-384-1992. This proposed change implements administrative control requiring periodic surveillance testing of the circuit breaker trip functions. It has been determined that the power source, the emergency diesel generator, is capable of supplying the necessary fault current for sufficient time to ensure the proper coordination without loss of function of Class 1E loads. This activity will not result in more than a minimal increase in the likelihood of occurrence of a malfunction of a system, structure, or component (SSC) important to safety previously evaluated in the USAR.

Evaluation Number: 59 2003-0002 Revision: 0
Title: Install Capacitive Coupler for Partial Arc Discharge Testing

Activity Description:

Installation of short high-voltage cables, capacitive couplers and instrumentation cables down to a termination box, which is to be used for testing the main generator insulation for partial arc discharge will be done. Six 25 kV capacitive couplers, two per phase, will be installed on the generation output lead area inside the iso-phase bus duct. The first coupler per phase will be connected to the iso-phase conductor near the generator disconnect link area and the second will be connected to the conductor at the vertical to horizontal transition area. Short, 35 kV rated cables, approximately two feet long, will connect the couplers to the iso-phase conductor. Instrumentation cables will route low voltage signal from the couplers down to a vendor termination box for testing. Vendor equipment will be brought in on a periodic basis to connect and test for partial arc discharge that may result from generator winding insulation breakdown. The bus couplers to the main generator output leads are passive and will not have an adverse effect on the function or operation of the iso-phase bus to carry rated current and voltage.

50.59 Evaluation:

The iso-phase bus duct connects the main generator high voltage output to the three main step up transformers and the unit auxiliary transformer. The iso-phase bus duct conductors are rated to carry generator output power at 25 kV and 33,500 amperes to the main transformers and 2500 amperes to the unit auxiliary transformer. Insulators are provided to support the main conductors and isolate from electrical grounds. The iso-phase bus duct conductors operate on a floating delta system. There is a small possibility that one of the insulators could fail and cause the iso-phase bus conductor to short to ground. This short would result in a ground of the generator and subsequent trip of the unit. The installation of the capacitive bus couplers adds six additional insulators to the iso-phase bus conductors that have the same potential failure mechanisms as the existing insulators on the iso-phase bus conductor. It was determined that this change does not result in more than a minimal increase in the likelihood of occurrence of a malfunction of a SSC important to safety.

Evaluation Number: 59 2003-0003 Revision: 0
Title: Containment Recirculation Sump Screen Evaluation

Activity Description:

The Wolf Creek design for containment recirculation sump screens specifies the nominal size of the openings in the inner screen to be 1/8 inch. During an inspection of the screens it was found that some openings did not meet this criteria. A limited number of openings in the inner screen for the containment recirculation sump greater than 1/8 inch but less than 1/4 inch are being accepted for use-as-is. Methods of repair are provided for any openings greater than 1/4 inch. A limited amount of the existing fibrous debris and paint chips that are located in the space between the inner and middle screen may not be practical to remove and are accepted for use-as-is. The existing as-found coating that has degraded by flaking or chipping is accepted for use-as-is after removal of loosely hanging flakes of paint. This change is applicable for both trains of containment recirculation sumps.

50.59 Evaluation:

The 50.59 Screen conservatively concluded that this activity involves a change to an SSC that adversely affects an USAR design function. During post-accident recovery, the altered inner debris screen has a slightly degraded capability to block certain sizes of debris from entering into the containment sumps, increasing the potential of adversely effecting downstream components in the emergency core cooling system, the containment spray system, and the reactor core, and the presence of fibrous and coating debris has the potential to adversely effect the net positive suction head (NPSH) of the low head safety injection pumps and the containment sumps. The 50.59 Evaluation concluded that the effects on accidents and malfunctions previously evaluated in the USAR were nonexistent or negligible.

Evaluation Number: 59 2004-0001 Revision: 0
Title: Revise Interim On-Site Storage (IOS) Facility Usage

Activity Description:

The storage and handling of radioactive waste as described in the USAR needs clarification because the processing and handling of radioactive wastes at WCGS has changed over the years and the disposal site requirements have also been changing. This activity will allow the temporary storage of wet wastes on-site in the IOS/waste bale drumming facility. Previously, the facility was only used for solidified waste or waste meeting the no freestanding water criteria of Branch Technical Position ETSB 11-3. The wet wastes to be stored are those wastes that do not meet the freestanding liquid requirements of the burial site.

50.59 Evaluation:

The wet waste storage containers are to be designed to withstand the corrosive nature of the wet waste for the expected duration of the storage. Temporary storage is currently defined as a period of time not to exceed five years. The wet waste will be processed (i.e. dewatered) or shipped to a water processor for treatment prior to disposal. The requirements for free standing liquid are also discussed in 10CFR61, "Licensing Requirements for Land Disposal of Radioactive Waste."

Generic Letter 81-38, "Storage of Low-Level Radioactive Wastes at Power Reactor Sites" provided design guidance on the requirements for IOS facilities and allows for the storage of wet waste. The WCGS IOS was designed to provide a temporary (5 years) storage location for site generated radioactive waste. All of the storage is located inside buildings within the protected area. The storage rooms have provisions to collect and sample liquid drainage. The waste is stored in containers that are compatible with the type of waste being stored. The types of containers used for wet waste include drums and High Integrity Containers (HIC). All of the wastes are protected from the effects of weather, are monitored periodically for leakage, and are ready to ship per 10CFR71, "Packaging and Transportation of Radioactive Material" and 49CFR170 requirements. Inventory records of waste types, contents, dates of storage, etc. are maintained.

The activity of temporary storage of wet radioactive waste does not represent any kind of new radiation hazard and continues to meet regulatory requirements.