

UNITED STATES NUCLEAR REGULATORY COMMISSION REGION IV 611 RYAN PLAZA DRIVE, SUITE 400 ARLINGTON, TEXAS 76011-4005

August 11, 2005

Rick A. Muench, President and Chief Executive Officer Wolf Creek Nuclear Operating Corporation P.O. Box 411 Burlington, KS 66839

SUBJECT: WOLF CREEK GENERATING STATION - NRC INSPECTION REPORT 05000482/2005009

Dear Mr. Muench:

On July 14, 2005, the NRC completed an inspection at your Wolf Creek Generating Station. The enclosed report documents the inspection findings, which were discussed on July 14, 2005, with you and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Jeff Clark, P.E., Chief Engineering Branch 1 Division of Reactor Safety

Docket: 50-482 License: NPF-42 Wolf Creek Nuclear Operating Corporation

Enclosure: NRC Inspection Report 05000482/2005009 w/Attachment: Supplemental Information

cc w/enclosure: Vice President Operations/Plant Manager Wolf Creek Nuclear Operating Corp. P.O. Box 411 Burlington, KS 66839

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Vick L. Cooper, Chief, Air Operating Permit and Compliance Section Kansas Department of Health and Environment Bureau of Air and Radiation 1000 SW Jackson, Suite 310 Topeka, KS 66612-1366 Wolf Creek Nuclear Operating Corporation

Electronic distribution by RIV: Regional Administrator (BSM1) DRP Director (ATH) DRS Director (DDC) DRS Deputy Director (KMK) Senior Resident Inspector (FLB2) Resident Inspector (TBR2) SRI, Callaway (MSP) Branch Chief, DRP/B (WBJ) Senior Project Engineer, DRP/B (RAK1) Team Leader, DRP/TSS (RLN1) RITS Coordinator (KEG) DRS STA (DAP) J. Dixon-Herrity, OEDO RIV Coordinator (JLD) RidsNrrDipmlipb WC Site Secretary (SLA2)

SI	SP Review Completed	d: _	Y ADAI	MS: 4 Yes	🗆 No	Initia	als:SDC
4	Publicly Available		Non-Publicly	Available [Sensitive	4	Non-Sensitive

RI:DRP/C	RI:EB1	RI:EB1	C:EB1	C:PBB	C:PBB	
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08/03/05	08/03/05	08/02/05	08/10/05	08/10/05	08/11/05	
OFFICIAL RECORD	T=Tele	phone	E=E-mail	F=Fax		

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION REGION IV

Docket No.:	50-482
License No.:	NPF-42
Report No:	05000482/2005009
Licensee:	Wolf Creek Nuclear Operating Corporation
	Wolf Creek Generating Station
Location:	1550 Oxen Lane NE Burlington, Kansas
Dates:	June 27 through July 15, 2005
Lead Inspector:	S. Cochrum, Resident Inspector, Projects Branch C
Inspectors:	W. McNeill, Senior Reactor Inspector, Engineering Branch 1 J. Adams, Reactor Inspector, Engineering Branch 1
Accompanying Personnel:	J. Keeton, Consultant
Approved By:	Jeff Clark, Chief Engineering Branch 1 Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000482/2005009; 06/27-07/15/2005; Wolf Creek Generating Station; Evaluation of Changes, Tests, or Experiments and Safety System Design and Performance Capability

The NRC conducted an Evaluation of Changes, Tests, or Experiments; and Safety System Design and Performance Capability inspection with three regional inspectors and one contract inspector. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. <u>NRC-Identified and Self-Revealing Findings</u>

No findings of significance were identified.

B. Licensee-Identified Violations

No findings of significance were identified.

Report Details

1. **REACTOR SAFETY**

Introduction

The NRC conducted an inspection to verify that the licensee adequately preserved the facility safety system design and performance capability and that the licensee preserved the initial design in subsequent modifications of the system selected for review. The scope of the review also included any necessary non safety-related structures, systems, and components that provided functions to support safety functions. This inspection also reviewed the licensee's programs and methods for monitoring the capability of the selected systems to perform the current design basis functions. This inspection verified aspects of the initiating events, mitigating systems, and barrier cornerstones.

The licensee based the probabilistic risk assessment model for the Wolf Creek Generating Station on the capability of the as-built safety systems to perform their intended safety functions successfully. The inspectors determined the area and scope of the inspection by reviewing the licensee's probabilistic risk analysis models to identify the most risk significant systems, structures, and components. The inspectors established this according to their ranking and potential contribution to dominant accident sequences and/or initiators. The inspectors also used a deterministic approach in the selection process by considering recent inspection history, recent problem area history, and all modifications developed and implemented.

The team reviewed in detail the emergency diesel generators. The primary review prompted parallel review and examination of support systems, such as, lubrication, fuel oil, cooling water, instrumentation, and other related structures and components.

The team assessed the adequacy of calculations, analyses, engineering processes, and engineering and operating practices that the licensee used for the selected safety system and the necessary support systems during normal, abnormal, and accident conditions. Acceptance criteria used by the NRC inspectors included NRC regulations, the technical specifications, applicable sections of the Updated Safety Analysis Report, applicable industry codes and standards, and industry initiatives implemented by the licensee's programs.

1R02 Evaluations of Changes, Tests, or Experiments (71111.02)

a. Inspection Scope

The team inspected the effectiveness of the licensee's implementation of changes to facility structures, systems, and components, risk-significant normal and emergency operating procedures; test programs; and the updated final safety analysis reports in accordance with 10 CFR 50.59, "Changes, Tests, and Experiments."

The team reviewed five licensee-performed 10 CFR 50.59 evaluations to verify that the licensee had appropriately considered the conditions under which the licensee may

make changes to the facility or procedures or conduct tests or experiments without prior NRC approval. The licensee had performed only five evaluations since the last NRC inspection of 10 CFR 50.59 activities.

The team also reviewed 15 licensee-performed 10 CFR 50.59 screenings, in which the licensee determined that evaluations were not required, to ensure that the licensee's exclusion of a full evaluation was consistent with the requirements of 10 CFR 50.59.

The team reviewed and evaluated the most recent licensee corrective action documents written since the last NRC 10 CFR 50.59 inspection to determine whether the licensee conducted sufficient in-depth analyses of their program to allow for the identification and subsequent resolution of problems or deficiencies.

b. Findings

No findings of significance were identified.

1R21 Safety System Design and Performance Capability (71111.21)

- .1 <u>System Requirements</u>
- a. Inspection Scope

The team inspected the following attributes of the emergency diesel generators: (1) process medium (water and air), (2) energy sources, (3) control systems, and (4) equipment protection. The team examined the procedural instructions to verify instructions as consistent with actions required to meet, prevent, and/or mitigate design basis accidents. The team also considered requirements and commitments identified in the Updated Safety Analysis Report, technical specifications, design basis documents, plant drawings and operating experience.

b. Findings

No findings of significance were identified.

.2 System Condition and Capability

a. Inspection Scope

The team reviewed the periodic testing procedures for the emergency diesel generators to verify that the licensee periodically verified the capability of the system. The team also reviewed the system's operations by conducting system walkdowns; reviewing normal, abnormal, and emergency operating procedures; and reviewing the Updated Safety Analysis Report, technical specifications, design calculations, drawings, and procedures.

b. Findings

No findings of significance were identified.

.3 System Walkdowns

a. Inspection Scope

The team performed walkdowns of the accessible portions of the emergency diesel generators and required support systems. Inspectors focused on the installation and configuration of switchgear, motor control centers, manual transfer switches, field cabling, raceways, piping, components, and instruments. During the walkdowns, the team assessed:

- The placement of protective barriers and systems;
- The susceptibility to flooding, fire, or environmental conditions;
- The physical separation of trains and the provisions for seismic concerns;
- Accessibility and lighting for any required local operator action;
- The material condition and preservation of systems and equipment; and
- The conformance of the currently-installed system configurations to the design and licensing bases.

b. Findings

No findings of significance were identified.

.4 Design Review

a. Inspection Scope

The team reviewed the current as-built instrument and control, electrical, and mechanical design of the emergency diesel generators. These reviews included an examination of design assumptions, calculations, required system thermal-hydraulic performance, electrical power system performance, protective relaying, control logic, and instrument setpoints and uncertainties. The team also performed selected single-failure evaluations of individual components and circuits to determine the effects of such failures on the capability of the system to perform its design safety functions. The team also reviewed the licensee's calculations and methodology for ensuring the emergency diesel generators are protected against seismic, flooding, fire, and high energy line break events.

The team reviewed calculations, drawings, specifications, vendor documents, Updated Safety Analysis Report, technical specifications, emergency operating procedures, and temporary and permanent modifications.

b. Findings

No findings of significance were identified.

.5 <u>Safety System Inspection and Testing</u>

a. Inspection Scope

The team reviewed the program and procedures for testing and inspecting selected components in the emergency diesel generators. The review included the results of surveillance tests required by the technical specifications and selective review of Class 1E control circuits for capability to test system functions.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution

a. Inspection Scope

The team reviewed a sample of emergency diesel generator and support systems problems identified by the licensee in the corrective action program to evaluate the effectiveness of corrective actions related to design issues. The specific corrective action documents that were sampled and reviewed by the team are listed in the attachment to this report. The team also reviewed the actions the licensee that taken in response to industry identified problem associated with the emergency diesel generator and support equipment.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

Exit Meeting Summary

The team leader presented the inspection results in the areas of evaluations of changes, tests, or experiments, and safety system design and performance capability to Mr. R. Muench, President and CEO, and other members of licensee staff at the conclusion of the onsite inspection on July 14, 2005. Licensee management acknowledged the inspection findings.

Proprietary information was reviewed by the team and returned to the licensee at the end of the inspection. The licensee verified that the team's documents did not contain any proprietary information.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee:

- R. Muench, President and CEO
- M. Sunseri, Vice President Oversight
- S. Hedges, Vice President Operations and Plant Manager
- T. Garrett, Vice President Engineering
- J. Makar, Manager Systems Engineering
- E. Ray, Manager Operations
- T. Anselmi, Manager Design Engineering
- D. Gerrelts, Supervisor System Engineering
- D. Hooper, Supervisor Licensing
- B. Muilenberg, Licensing
- S. Comstock, Senior Engineer Inservice Testing
- J. Weeks, EDG System Engineer
- C. Garcia, Supervisor Electrical Engineering
- M. Ferrel, Maintenance Rule Coordinator

NRC:

- F. Brush
- T. Rhodes

DOCUMENTS REVIEWED

Procedures

AI 28A-011, PIR Initiation, Revision 3 AI 28A-012, PIR Screening, Revision 4 AI 28A-013, PIR Evaluation, Action Plans, and Follow Up, Revision 6 AP 28A-001, Performance Improvement Request, Revision 23 AP-26A-003, 10CFR50.59 Reviews, Revision 8 AP 28-011, Resolving Deficiencies Impacting SSCs, Revision 1 INC L-1000, Calibration of Miscellaneous Loops, Revision 9 INC C-1003, Calibration of Transmitters, Revision 7 AP 29B-002, ASME Code Testing of Pumps and Valves, Revision 4 AP 29B-003, Surveillance Testing, Revision 5 AP 23D-001, Motor Operated Valve Program, Revision 2 WC OP-02, Inservice Testing Program for Pumps and Valves, Revision 12 OFN SG-003, Natural Events, Revision 9 AI 20E-001, Nuclear Network, Revision 2 AP 05-002, Dispositions and Change Packages, Revision 6 AP 26B-003, Revisions to the Updated Safety Analysis Report, Revision 5 WC RE-09-JE, IST Design Basis Document - System JE, Revision 0 AI 14-006, Severe Weather, Revision 6 EMG C-0, Loss of all AC Power, Revision 15

SYS KJ-200, Inoperable Emergency Diesel, Revision 11 SYS KJ-121, Diesel Generator NE01 and NE02 Lineup for Automatic Operation, Revision 35 OFN RP-017, Control Room Evacuation, Revision 21 MPE E009Q-03, Inspection and Testing of Siemens Vacuum Breakers, Revision 3

Surveillance Test and Verification Procedures

STS JE-001A, Emergency Diesel Fuel Oil System Train A Test, Revision 11

STS JE-001B, Emergency Diesel Fuel Oil System Train B Test, Revision 11

STS KJ-001B, Integrated D/G and Safeguards Actuation Test - Train B, Revision 28A

STS KJ-005A, Manual/Auto Start, Synchronization and Loading of Emergency Diesel Generator NE01, Revision 44

STS KJ-005B, Manual/Auto Start, Synchronization and Loading of Emergency Diesel Generator NE02, Revision 42

STS KJ-001A, Integrated D/G and Safeguards Actuation Test - Train A, Revision 26

STS PE-021E, Train 'A' Emergency Fuel Oil Transfer System Pressure Test, Revision 4

STS PE-021F, Train 'B' Emergency Fuel Oil Transfer System Pressure Test, Revision 5

STS KJ-001A, Integrated D/G and Safeguards Actuation Test - Train A, Revision 28A

STS KJ-001B, Integrated D/G and Safeguards Actuation Test - Train B, Revision 28A

STS IC-208A, NB01 4kV Loss of Voltage and Loss of Off-site Power TADOT, Revision 0

STS IC-209A, 4kV Degraded Voltage TADOT NB01 Bus - Separation Group 1, Revision 7

STS IC-802A, 4kV Loss of Voltage and Loss of Off-site Power Channel Calibration Train A, Revision 5

STS IC-803A, 4kV Undervoltage - Grid Degraded Voltage Channel Calibration NB01 Bus, Revision 3

STS IC-805A, Channel Calibration of NB01 Grid Degraded Voltage, Time Delay Trip, Revision 7

STS IC-806A, 4kV Undervoltage - Loss of Voltage - Channel Calibration of 1 Second Time Delay Circuit NB01, Revision 3

Calculations

AN-96-126, Wolf Creek Generating Station Probabilistic Safety Assessment Flooding Analysis, Revision 0

E-H-8, System NB Protective Relays, Revision 5

F-2, Cable Sizing, Revision 0

F-3, Cable Sizing, Revision 4

XX-E-006, AC System Analysis, Revision 5

XX-E-012, Safety-Related MCC Control Circuit Allowable Wire Lengths, Revision 1

FL-10, "Flooding of Diesel Building Rooms," Revision 0

M-JE-321, Emergency Diesel Storage and Day Tank Volumes and Level Limits, Revision 2

AN-98-046 Wolf Creek Generating Station Electrical Power Systems Notebook - 98 Update

00KJ-002 Determination of required Minimum Wall Thickness for Waterboxes of Heat Exchangers, Revision 1

KJ-003 Operability of the Diesel Generators Due to an Exhaust Leak into the Room, Revision 0

KJ-010 Tube Plugging Criteria for Emergency Diesel Generators Heat Exchangers, Revision 0

KJ-02-W Tube Erosion of Diesel Generator Heat Exchangers, Revision 2

KJ-461 Heat Exchanger Tube Minimum Wall, Revision 0

KJ-C-005 KJ System Drain Line Flaw Evaluation, Revision 0

KJ-MW-004 Diesel Generator Jacket Water Heat Exchanger Tube Plugging Criteria, Revision 0

KJ-MW-006 Diesel Generator Intercooler Heat Exchanger Performance at Reduced Lake Temperature, Revision 1

KJ-MW-008 Diesel Generator Heat Exchanger and Lube Oil Exchanger Minimum Tube Wall Thickness, Revision 0

KJ-S-003 Evaluation of Tornado Wind Loads , Revision 0

Drawings

E-11005, List of Loads Supplied by Emergency Diesel Generator, Revision 24

E-11023, Relay Setting Tabulation and Coordination Curves, System NB, Sheet 1, Revision 4

E-11023, Relay Setting Tabulation and Coordination Curves, System NB, Sheet 2 Revision 4

E-11023, Relay Setting Tabulation and Coordination Curves, System NB, Sheet 11, Revision 0

E-11NB01, Lower Medium Voltage System Class 1E 4.16 kV Single Line Meter and Relay Diagram, Revision 1

E-11NB02, Lower Medium Voltage System Class 1E 4.16 kV Single Line Meter and Relay Diagram, Revision 1

E-11NG01, Low Voltage System Class 1E 480V Single Line Meter and Relay Diagram, Revision 8

E-11NG02, Low Voltage System Class 1E 480V Single Line Meter and Relay Diagram, Revision 7

E-12NF-1(Q), Load Shedding and Emergency Load Sequence Logic, Revision 2

E-13GE18, Schematic Diagram Condenser Air Removal Filtration System Dampers, Revision 2

E-11005, List of Loads Supplied by Emergency Diesel Generator, Revision 30

M-13JE01 (Q), Piping Orthographic Emergency Fuel Oil System (Below Grade), Revision 4

M-13JE02, Piping Isometric Emergency Fuel Oil System - Train "A" Diesel Generator Building, Revision 7

M-13JE03, Piping Isometric Emergency Fuel Oil System - Train "B" Diesel Generator Building, Revision 7

M-13JE04 (Q), Piping Details Emergency Fuel-Oil System (Below Grade), Revision 0

M-12GM01, Piping & Instrumentation Diagram Diesel Generators Building HVAC, Revision 1

M-OH5211 (Q), Heating, Ventilating, & Air Conditioning Diesel Generator Building Plan and Sections, Revision 5

M-12JE01, Piping & Instrumentation Diagram Emergency Fuel Oil System, Revision 17

E-13KJ03A Schematic Diagram Diesel Generator KKJo1B Engine Control (Start/Stop Circuit), Revision 0

11E-13KJ03B Schematic Diagram Diesel Generator KKJo1B Engine Control (Diesel/Generator), Revision 3

E-13NE11 Schematic Diagram 4.16KV Diesel Generator NE02 Feeder Breaker 152NB0211, Revision 12

E-13NE13 Schematic Diagram Diesel Generator KKJ01B Exciter/Voltage Control, Revision 8

M-12HJ01 Piping and instrumentation Diagram Standby Diesel Generator Cooling Water System, Revision 9

M-12KJ02 Piping and instrumentation Diagram Standby Diesel Generator "A" Intake Exhaust, Fuel Oil, and Start Air Systems, Revision 16

M-12HJ03 Piping and instrumentation Diagram Standby Diesel Generator "A" Lube Oil System, Revision 8

M-12HJ04 Piping and instrumentation Diagram Standby Diesel Generator "B" Cooling Water System, Revision 11

M-12JE01 Piping and instrumentation Diagram Emergency Fuel Oil System, Revision 17

M-12KJ05 Piping and instrumentation Diagram Standby Diesel Generator "B" Intake Exhaust, Fuel Oil, and Start Air Systems, Revision 11

M-12HJ06 Piping and instrumentation Diagram Standby Diesel Generator "B" Lube Oil System, Revision 9

Configuration Change Packages (CCPs)

Change Package 11277 Change Package 11049

Plant Modification Requests (PMRs)							
11173	11577	11580	11620	11652	11662		
Setpoint Change Requests (SCRs)							
KJ-02-012 KJ-96-063	KJ-02-001 KJ-96-007	KJ-01-033 KJ-95-053	KJ-98-034	KJ-97-062	KJ-96-064		

Design Changes

CCP No. 10065, EG Physical Separation Exemption, Revision 0.

10 CFR 50.59 Evaluations

59 2003-001	59 2004-001	59 2004-002	59 2003-002
59 2003-003			

10 CFR 50.59 Screenings

CCP 05559	CCP 10416	CCP 11154	CCP 11285	CCP 11381
CCP 10107	CCP 10422	CCP 11237	CCP 11292	CCP 11035
CCP 10153	CCP 11017	CCP 11246	CCP 11128	CCP 10370

Performance Improvement Requests

2003-9162	2003-1829	2003-2754	2005-0363	2005-1038	2005-1122
2004-0047	1995-1962	2004-2938	2005-0469	2005-1044	2005-1301
2004-1224	2005-2064	2005-0097	2005-0614	2005-1071	2005-1535
2004-2349	2005-1535	2005-0100	2005-0717	2005-1106	2005-1551
2003-1985	19961963	2005-0128			

Maintenance Work Orders

00-223035-014	04-260316-004	03-257205-000	00-223036-000
02-234351-002	04-260316-005	03-257205-001	

Work Package

03-257144-010	03-257144-011	03-257144-012	03-269523-001
04-260104-019	04-267294-000	05-269198-000	05-269523-001
05-269523-003	05-269843-001	05-269849-000	05-269850-000
05-271471-000	05-271530-0000	05-271721-000	05-271726-000
05-272471-000	05-272471-001	05-272802-000	

Engineering Dispositions

SWO 05-272696-001, Condenser Air Removal Filtration System Dampers Limit Switch Contact Development

SWO 02-235284-005, Missing Coating on TJE01B

WO 01-232568-000, KJV0773A & B Check Valves Internal

Miscellaneous Documents

P-311 "Standby Diesel System - Exhaust System Piping", Revision 2.

018-01502, Goodrich Corporation Engineering Report, Wolf Creek NPP 6201 KW Diesel Generator Set, May 29, 2002.

M-018-0390-02, Colt Industries Special Report, Explanation of Frequency Dip Recovery Problems Encountered During the Sequential Load Testing, December 20, 1983.

SNUPPS Letter SLNRC 81-109, to Harold Denton, NRC NRR, Subject: Power Systems Branch Review, September 22, 1981.

ASME/ANSI OMa-1988 Addenda to ASME/ANSI OM-1987 Operation and Maintenance of Nuclear Power Plants", Part 6 "Inservice Testing of Pumps in Light-Water Reactor Power Plants"

ASME/ANSI OMa-1988 Addenda to ASME/ANSI OM-1987 Operation and Maintenance of Nuclear Power Plants", Part 10, Inservice Testing of Valves in Light-Water Reactor Power Plants

IN 2002-01, Metaclad Switchgear Failures and Consequent Losses of Offsite Power

IN 2004-19, Problems Associated with Back-up Power Supplies to Emergency Response Facilities and Equipment

IN 2005-15, Three-unit Trip and Loss of Offsite Power at Palo Verde Nuclear Generating Station

SER 96-00075, Relief Requests, Inservice Testing Program, Second 10-year Interval Wolf Creek Generating Station (TAC No. M03395)

ITIP 5432, "NRC Information Notice 2005-15: Three-Unit Trip and Loss of Offsite Power at Palo Verde Nuclear Generating Station" 6/13/2005

LER 2002-004-07, Sharon Harris Nuclear Power Plant Unit 1 Docket 50-400, License NPF-63 3/21/2005

OE12738, EDG Wrist Pin and Bushing Damage, 9/13/2001 (Proprietary INPO Document)

OE16870, Safe Shutdown Analysis (SSA) Deficiency (Proprietary INPO Document)

OE19532, Preliminary - Loss of Normal Power to a 480 Volt AC Distribution System (Proprietary INPO Document)

BID-BKRMV-1, Preventative Maintenance Background Information, Medium Voltage Switchgear (4.16 kV and above) & Associated Control Circuits

ANS-59.51, ANSI N195-1976, American National Standard Fuel Oil Systems for Standby Diesel-Generators

ANSI/ANS-59.51-1989, American National Standard Fuel Oil Systems for Standby Diesel-Generators

ANSI/IEEE Std 336-1971, IEEE Standard Installation, Inspection, and Testing Requirements for Instrumentation and Electric Equipment During the Construction of Nuclear Power Generating Stations

ANSI/IEEE Std 387-1977, IEEE Standard Criteria for Diesel-Generator Units Applied as Standby Power Supplies for Nuclear Power Generating Stations

ANSI/IEEE Std 384-1974, IEEE Trial -Use Standard Criteria for Separation of Class IE Equipment and Circuits

IEEE Std 384-1981, IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits

IEEE Std 384-1992, IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits

IEEE Std 308-1974, IEEE Standard Criteria for Class IE Systems for Nuclear Power Generating Stations

IEEE Std 344-1975, IEEE Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations

Regulatory Guide 1.137, Fuel-Oil Systems for Standby Diesel Generators

Regulatory Guide 1.75, Physical Separation of Electrical Systems, Revision 2

Regulatory Guide 1.9, Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants, Revision 3

Startup Field Report, 1-KJ-74, KJ/Standby Diesel Engines, May 17,1984

NRC Information Notice 91-29, Supplement 1: Deficiencies Identified During Electrical Distribution System Functional Inspections

Lesson Plan, SY 14 064 00, Emergency Diesel Generator (Mechanical), Revision 12

Lesson Plan, SY 14 064 01, Emergency Diesel Generator (Electrical) & Load Shed and Emergency Load Sequencer, Revision 4

Differential Pressure and Flow Data for Fuel Transfer Pumps from January 2004 to May 2005

Fuel Transfer Pump Performance Curve from Crane Company

Attachment

Design Bases System Notebook, Standby Diesel Engine System, WCNOC-91-KJ, Revision 2

Emergency Diesel Generators (KJ, NE, JE) System Health Report, dated June 7, 2005

Engineering Dispositions 1115565-1; 115566-1, Alternate Material for Emergency Diesel Generator Heat Exchanger Drain Lines, Revision 0

Instruction Manual for Installation, Operation, Maintenance, etc. of Emergency Diesel Generator Systems for Standard Nuclear Power Plant Systems Colt-67–700001-1, Revision 62

Wolf Creek Generating Station Technical Specifications, Amendment 151

Wolf Creek Nuclear Operating Company Importance File from 1998 Probabilistic Risk Analysis Model for Emergency Diesel Generator and Associated Systems

Wolf Creek System Description, Standby Diesel Engine System M-10KJ, Revision 2

Wolf Creek Updated Safety Analysis Report, Revision 16