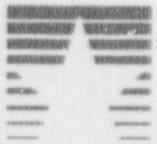

TUELECTRIC

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File # 10010
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Ref. # 10CFR50.34(b)

August 31, 1989

William J. Cahill, Jr.
Executive Vice President

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES)
DOCKET NOS. 50-445 AND 50-446
ADVANCE FSAR SUBMITTAL
PRIMARY AND BACKUP PROTECTION FOR CONTAINMENT
ELECTRICAL PENETRATION CIRCUITS

Gentlemen:

This letter provides an advance copy of changes to be included in a future FSAR amendment dealing with the primary and backup protection for certain containment electrical penetration circuits.

In order to facilitate NRC staff review of these changes, the enclosure is organized as follows:

1. Draft revised FSAR pages, with changed portions indicated by a bar in the margin, as they are to appear in a future amendment (additional pages immediately preceding and/or following the revised pages are provided if needed to understand the change).

2. Line-by-line description/justification of each item revised.

3. A copy of related SER/SSER sections.

4. An index page containing the title of "bullets" which consolidate and categorize similar individual changes by subject and related SER section.

5. The bold/overstrike version of the revised FSAR pages referenced by the description/justification for each item identified above. The bold/overstrike version facilitates review of the revisions by highlighting each addition of new text in bold type font and overstriking with a slash (/) the portion of the text that is deleted.

D029
1/1

If you have any questions regarding this submittal please contact Joe Harnden at (214) 812-8226.

Sincerely,

William J. Cahill, Jr.

William J. Cahill, Jr.

By: Roger D. Walker
Roger D. Walker
Manager, Nuclear Licensing

WJH/vld
Enclosure

c - Mr. R. D. Martin, Region IV
Resident Inspectors, CPSES (3)

Enclosure to TXX-89637
August 31, 1989

Advance FSAR Change Regarding Primary and Backup
Protection for Containment Electrical Penetration Circuits

f. Rod Control System Lift and Gripper Coil Circuits-

Q040.69

The primary and backup protection of the Lift Coil circuits is provided by the current limiting feature of the control sources in combination with fuses. For the Gripper Coil circuits, primary and backup protection is provided by fuses. DRAFT

66

g. Pressurizer Heater Circuits -

Q040.69

1. Control Group - The primary and backup protection of these circuits is provided by two feeder breakers in series. 75

2. Backup Groups - The primary and backup protection of these circuits is provided by the branch circuit breaker and the panel incoming breaker. 75

66

h. Motor Space Heaters

Q040.69

1. Heaters of motors fed from 480V SWGR - 8

Primary and backup protection are provided by separate circuit breakers. 8

66

2. Heaters of motors fed from 480V MCC's - 8

Fuses are used as primary and backup protection devices. 8

66

68

Q040.69

i. A. C. Lighting Panels Feeders - 8

Q040.69

Primary and backup protection are provided by separate circuit breakers. 8

Q040.69
52 s. Fire Protection/Detection System -
Q040.69
DRAFT Primary and backup protection is provided by fuses and breakers, respectively.
Q040.69
52 t. Fuel Transfer System -
Q040.69
52 115V, AC control circuit conductors of this system
68 penetrate containment. These circuits, including penetration conductors are protected against overcurrent by two fuses in series (primary and backup protection).
Q040.69
56 u. Emergency Evacuation System Warning Lights -
Q040.69
68 The primary and backup protection of these circuits is provided by means of a fuse and a circuit breaker, respectively.

68 v. In-Core Flux Mapping System -

68 The primary and backup protection for this system is provided by means of two fuses in series.

68 w. Plant Communication System -

68 The primary and backup protection for this system is provided by means of a fuse and circuit breaker, respectively.

68 x. Containment Door Position Limit Switches -

Backup protection is provided by a power supply with an automatic current limiting feature which limits the current to a tolerable level adequate for penetration protection. Primary protection for this circuit is provided by means of a breaker. DRAFT

y. Rod Position Indication Cabinets - 68

Power circuits from 120V distribution panels. Breakers are used as primary and backup protection devices. 68

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68

7. Compliance With NRC Regulatory Guide 1.75 [15] and IEEE 384 [31]

The CPSES design complies with the intent of NRC Regulatory Guide 1.75 and IEEE 384 (Refer to Appendix 1A(B)). Physical separation of redundant safety-related equipment and wiring is achieved by location in separate rooms or by providing barriers. Isolation devices are provided to preclude interaction between Class 1E and associated circuits and non-Class 1E circuits, as described in the following paragraphs. 60

Electrical isolation methods are used as required in power, control and instrumentation circuits to maintain the independence of redundant circuits and equipment such that protective functions required during and following any design basis event is accomplished. Different types of isolation devices are used for power, control and instrumentation circuits. 68

Isolation devices meet the criteria and performance requirements specified in IEEE 279-1971, Revision 1, and are qualified in accordance with IEEE 323-1974 and 344-1975. 68

CPSES FSAR AMENDMENT
DETAILED DESCRIPTION

FSAR Page (as amended)	Group	Description
8.3-46	3	Clarifies the means of primary and backup protection for the Rod Control System Lift and Gripper Coil circuits. Clarification: The Gripper Coil uses fuses for circuit protection without reliance on current limiting. This change is consistent with the latest revision of calculations. FSAR Change Request Number: 89-616.1 Related SER Section: 8.4.1 SER/SSER Impact: Yes FSAR conflicts with SER but was reviewed by NRC for this in Amendment 75. This change is conservative to the description in Amendment 75.
8.3-49	3	Corrects the means of primary and backup protection for the Fire Protection/Detection System. Correction: Corrects the means of primary and backup protection for the Fire Protection/Detection System to be consistent with latest revision of calculations (the description was accidentally reversed). FSAR Change Request Number: 89-616.2 Related SER Section: 8.4.1 SER/SSER Impact: Yes Part of current NRC review.
8.3-50	3	Revises the means of primary and backup protection for the Containment Door Position Limit Switches. Revision: Revises the means of primary and backup protection for the Containment Door Position Limit Switches to be consistent with the latest revision of CPSES calculations. FSAR Change Request Number: 89-616.3 Related SER Section: 8.4.1 SER/SSER Impact: Yes Part of current NRC review.

8.4 Other Electrical Features and Requirements for Safety

8.4.1 Containment Electrical Penetrations

In order to meet the requirements set forth in IEEE Standard 317-1972, "Electrical Penetration Assemblies in Containment Structures for Nuclear Power Generating Stations," as augmented by the recommendations of Regulatory Guide 1.63, the containment electrical penetration assemblies for Comanche Peak are designed to withstand, without loss of mechanical integrity, the maximum available fault current long enough to allow backup circuit protection to operate, assuming a failure of the primary protective device. The circuit overload protection systems for electrical penetration assemblies meet the single- failure criterion. The applicant has applied the design criteria discussed below to the containment electrical penetration circuits.

Reactor coolant pumps are the only 6.9-kV loads inside the containment. The primary and backup protection of these circuits is provided by means of a reactor coolant pump breaker and a bus incoming supply breaker. DC control power for these breakers comes from different sources. This is in accordance with Regulatory Guide 1.63 and acceptable.

The scheme for the 480-V switchgear motor feeder circuits is the same as for the 6.9-kV circuits. DC control power for the primary and backup breakers is from different dc breakers.

For the 480-V MCC outgoing feeders, two breakers are used in series in each circuit. One is a primary and the other is a backup device.

For the control circuits of the 480-V MCC outgoing feeders, two identical fuses are used in series in each ungrounded leg of the 120-V ac control circuits. One is a primary and the other is a backup device.

DC circuits are supplied from the ungrounded dc power systems. The primary and backup protection of the 125-V dc lighting panel feeder and the 125-V dc for solenoid-operated valves is provided by circuit breaker and fuse in each case.

For rod control system lift and gripper coil circuits, fuses are used as primary and backup protection devices.

Primary and backup protection for the electric hydrogen recombiner is provided by two identical breakers in series.

At each voltage level, the applicant is periodically testing the penetration protective devices. The Comanche Peak electrical containment penetrations have been designed in accordance with IEEE Std 317-1972 and are protected in accordance with Regulatory Guide 1.63 and, therefore, are acceptable.

8.4.2 Thermal Overload Protection Bypass

Motor-operated valves with thermal overload protection devices for the valve motors are used in safety systems and their auxiliary supporting systems. Operating experience has shown that indiscriminate application of thermal overload protection devices to the motors associated with these valves could

8.4.1 Containment Electrical Penetrations

9. The FSAR has changed the primary and backup protection for certain containment electrical penetration circuits. (77)

f. Rod Control System Lift and Gripper Coil Circuits-

Q040.69

The primary and backup protection of **the Lift Coil ~~these~~** circuits is provided by the current limiting feature of the control sources in combination with fuses. **For the Gripper Coil circuits, primary and backup protection is provided by fuses.**

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68 w. Plant Communication System -

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68 x. Containment Door Position Limit Switches -

Backup ~~*Primary*~~ protection is provided by a power supply with an automatic current limiting feature which limits the current to a tolerable level adequate for penetration protection. ~~**Primary** **Backup**~~ protection for this circuit is provided by means of a ~~**breaker** *fuse*~~. | 68

y. Rod Position Indication Cabinets - | 68

Power circuits from 120V distribution panels. Breakers are used as primary and backup protection devices. | 68

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The CPSES design complies with the intent of NRC Regulatory Guide 1.75 and IEEE 384 (Refer to Appendix 1A(B)). Physical separation of redundant safety-related equipment and wiring is achieved by location in separate rooms or by providing barriers. Isolation devices are provided to preclude interaction between Class 1E and associated circuits and non-Class 1E circuits, as described in the following paragraphs. | 60

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