

September 25, 2003

Mr. Garry L. Randolph  
Vice President and Chief Nuclear Officer  
Union Electric Company  
Post Office Box 620  
Fulton, MO 65251

Mr. Gregg R. Overbeck  
Senior Vice President, Nuclear  
Arizona Public Service Company  
P.O. Box 52034  
Phoenix, AZ 85072-2034

Mr. Gregory M. Rueger  
Senior Vice President, Generation and  
Chief Nuclear Officer  
Pacific Gas and Electric Company  
Diablo Canyon Power Plant  
P. O. Box 3  
Avila Beach, CA 93424

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RE: TECHNICAL SPECIFICATIONS 3.8.1 AND 3.8.4 FOR CALLAWAY, DIABLO CANYON, PALO VERDE, AND WOLF CREEK PLANTS (TAC NOS. MB9664, MB9476, MB9477, MB9150, MB9151, MB9152, AND MB8763, RESPECTIVELY)

Dear Messrs. Randolph, Rueger, Overbeck and Muench:

By letters dated June 6 (Callaway, ULNRC-04837), May 29 (Diablo Canyon, DCL-03-061), May 28 (Palo Verde, 102-04946), and April 30 (Wolf Creek, WO 03-0009), 2003, you submitted applications for license amendments to modify several surveillance requirements (SRs) in Technical Specifications (TSs) 3.8.1 and 3.8.4 on alternating current and direct current sources – operating, respectively, for plant operation. The revised SRs would have notes deleted or modified to allow the SRs to be performed, or partially performed, in reactor modes that are currently not allowed by the TSs. The current SRs are not allowed to be performed in Modes 1 and 2, and several of the current SRs also cannot be performed in Modes 3 and 4.

You jointly submitted your applications as members of the Strategic Teaming and Resource Sharing (STARS), an industry consortium of six nuclear power plant licensees. The applications are similar, but there are some differences. The staff is reviewing the applications jointly.

The enclosed information is needed for the staff to complete its review of the applications. To expedite the staff's review to meet the agreed-upon schedule, the request for additional information was provided to your staff by e-mail on September 3, 2003. Any differences between the enclosed questions and the e-mail is editorial. In a call on the questions with your staff, they agreed to submit the responses to the questions by October 30, 2003. If the

Multiple Addressees

- 2 -

responses are submitted by that date, the staff expects to issue its evaluation on schedule. If you have any questions, contact me, the lead project manager, at 301-415-1307, or at [jnd@nrc.gov](mailto:jnd@nrc.gov) through the internet.

Sincerely,

***/RA/***

Jack Donohew, Senior Project Manager, Section 2  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-275, 50-323, 50-482, 50-483,  
50-528, 50-529, and 50-530

Enclosure: Request for Additional Information

cc w/encl: See next page

responses are submitted by that date, the staff expects to issue its evaluation on schedule. If you have any questions, contact me, lead project manager, at 301-415-1307, or at [jnd@nrc.gov](mailto:jnd@nrc.gov) through the internet.

Sincerely,

***/RAI***

Jack Donohew, Senior Project Manager, Section 2  
Project Directorate IV  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-275, 50-323, 50-482, 50-483,  
50-528, 50-529, and 50-530

Enclosure: Request for Additional Information

cc w/encl: See next page

DISTRIBUTION:

PUBLIC  
PDIV-2 Reading  
RidsNrrDlpmPdiv(HBerkow)  
RidsNrrPMJDonohew  
RidsNrrLAEPeyton  
RidsOGCRp  
RidsACRSACNWMailCenter  
DGraves, RIV  
OChopra  
MConnell  
MFields  
GShukla  
LSmith, RIV  
APal

\* Three EEIB RAI memos dated 08/29/2003

**ACCESSION NO.: ML032721646**

**NRR-088**

OFFICE	PDIV-2/PM	PDIV-2/LA	EEIB/SC	PDIV-2/SC
NAME	JDonohew	EPeyton	RJenkins*	SDembek
DATE	9/24/03	9/23/03	08/29/2003	9/24/03

DOCUMENT NAME: C:\ORPCheckout\FileNET\ML032721646.wpd

OFFICIAL RECORD COPY

REQUEST FOR ADDITIONAL INFORMATION

TECHNICAL SPECIFICATION CHANGES TO SECTIONS 3.8.1 AND 3.8.4

AC AND DC SOURCES – OPERATING

CALLAWAY, DIABLO CANYON, PALO VERDE, AND WOLF CREEK PLANTS

DOCKET NOS. 50-483, 50-275, 50-323, 50-528, 50-529, 50-530, AND 50-482

The required onsite emergency backup power supply to offsite power is referred to in the licensees' applications, as either the emergency diesel generators (EDGs) or the diesel generators (DGs). Both acronyms are used in the staff's questions.

The following questions are separated into (1) those questions which are the same for the four plants, and (2) those questions which are different:

1. Callaway, Diablo Canyon Units 1/2, Palo Verde Units 1/2/3, and Wolf Creek
  - a. Surveillance Requirement (SR) 3.8.4.7 and SR 3.8.4.8 contain a Note that has been modified to add "However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced." Provide the intent of this note in detail (what exactly will be done at power, the duration of these surveillances and its impact on the limiting condition of operation, details regarding assessment, etc.)
  - b. Does the work control programs, risk management programs, and/or procedures cover a comprehensive walk-down just prior to entering the period of reduced equipment availability during EDG testing? Provide details about the walk-down or justify why such a walk-down is not required.
  - c. Indicate where the loss-of-offsite power signal comes from when the EDG is powering, or is paralleled to, the safety bus.
  - d. Discuss administrative controls to preclude performing these surveillances during other maintenance and test conditions that could have adverse effects on the offsite power system or plans for restricting additional maintenance or testing of required safety systems that depend on the remaining EDG as a source. Additionally, discuss if the remaining EDG were to become inoperable while the other EDG is being tested, would the test be aborted.
  - e. Discuss whether procedures are in place to alert operators when to perform either portions or full SRs/testing. Will the operators receive training on the procedures related to the proposed technical specification changes prior to implementation?
  - f. Discuss the compensatory measures that will be implementing during performance of SRs 3.8.1.10, 3.8.1.13, and 3.8.1.14.

- g. For SR 3.8.1.13, discuss (1) how the SR is performed, and (2) how the safety injection (SI) signal is generated without disturbing power operation.
1. Callaway and Wolf Creek Only
    - a. SR 3.8.1.10 – In Section 4.1.1 of the application, it is stated that "experience with this test has shown that the voltage 'perturbation' seen on the bus during and just after the load rejection is not significant, i.e., within 5 percent step change. Data recorded from past performances of this test show that bus voltage during the "transient" remains well above the minimum required voltage for bus loads and typically recovers within one second." Discuss the impact of this voltage transient on degraded voltage relays. Also, during power operation the voltages at the safety buses are relatively lower than during shutdown. What will be the voltage transient due to a full load rejection test at the lower voltages and its impact on degraded voltage relays?
    - b. SR 3.8.1.10 – In Section 4.1.4 of the application, it is stated that "In the event of a LOOP [loss-of-offsite power] occurring while a DG is running and paralleled to offsite power for testing . . . At some point, however, because loading would exceed the DG's capability, the DG would be unable to match load and either the bus undervoltage relays would trip (after timing out) or the DG overcurrent or underfrequency relays would trip." Discuss the time associated with manually resetting the involved relays and components.
    - c. Questions a. and b. above are also applicable to SR 3.8.1.14.
  3. Diablo Canyon Units 1/2 Only
    - a. SR 3.8.1.10 – In Section 4.1 of the application, it is stated that "during the last refueling outage at DCPD [Diablo Canyon Power Plant] when the DG full load reject SRs were performed on each diesel, the voltage transients experienced by the loads on the associated buses were minor (the worst case was an approximate 1.29 percent change of 54 volts in the bus voltage at the 4.16 kV level, in approximately 0.09 seconds)." Discuss the impact of this voltage transient on degraded voltage relays. Also, during power operation the voltages at the safety buses are relatively lower than during shutdown. What will be the voltage transient due to a full load rejection test at the lower voltages and its impact on degraded voltage relays?
    - b. Question a. above is also applicable to SR 3.8.1.14.
  4. Palo Verde Units 1/2/3 Only
    - a. SR 3.8.4.6 contains a Note that has been modified to add "However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced." Discuss the intent of this note in detail (e.g., what exactly will be done at power,

the duration of these surveillances and its impact on the limiting condition of operation, details regarding assessment, etc.).

- b. SR 3.8.1.10 – In Section 4.1 of the application, it is stated that "at PVNGS when the DG full load reject SR is performed at shutdown, the voltage transients experienced by the loads on the associated bus are considered minimal [at approximate 10 percent step change (400Vac)] in the bus voltage at the 4.16 kV level, with voltage recovery within 1 second." Discuss the impact of this voltage transient on degraded voltage relay. Also, since the voltages at the safety buses during power operation are relatively lower than during shutdown, what will be the voltage transient due to full load rejection test during power operation?
- c. SR 3.8.1.10 – In Section 4.1 of the application, it is stated that "If a LOP occurs during testing, the diesel generator either trips on overcurrent or continues to run, depending upon if the resulting load is in excess of the diesel generator's load rating. If the load is excessive, the diesel generator will trip on overcurrent and the diesel generator breaker will trip automatically on a DG shutdown signal." Discuss how will the DG be started and DG breaker be closed once overcurrent relay tripped the DG? Will it involve manual resetting of the relays? If so, discuss the time associated with the manual resetting of the relay.
- d. Questions b. and c. above are also applicable to SR 3.8.1.14.
- e. Discuss the compensatory measures that will be implemented during performance of SR 3.8.1.20.
- f. On page 12 of the application, it is stated that "only one DG per unit is paralleled to offsite power at any one time and any offsite grid disturbances would only affect one operable DG." Discuss the possibility of testing an EDG of each unit being simultaneously paralleled to offsite power, such that an offsite disturbance could affect all three units. Discuss the testing practice for SRs 3.8.1.10, 3.8.1.13, 3.8.1.14, and 3.8.1.20 in terms of such a situation.

Callaway Plant, Unit 1

cc:

Professional Nuclear Consulting, Inc.  
19041 Raines Drive  
Derwood, MD 20855

John O'Neill, Esq.  
Shaw, Pittman, Potts & Trowbridge  
2300 N. Street, N.W.  
Washington, D.C. 20037

Mr. Mark A. Reidmeyer, Regional  
Regulatory Affairs Supervisor  
Regulatory Affairs  
AmerenUE  
P.O. Box 620  
Fulton, MO 65251

U.S. Nuclear Regulatory Commission  
Resident Inspector Office  
8201 NRC Road  
Steedman, MO 65077-1302

Mr. Chris Younie  
Manager, Quality Assurance  
AmerenUE  
P.O. Box 620  
Fulton, MO 65251

Manager - Electric Department  
Missouri Public Service Commission  
301 W. High  
P.O. Box 360  
Jefferson City, MO 65102

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-4005

Mr. Ronald A. Kucera  
Deputy Director for Public Policy  
Department of Natural Resources  
P.O. Box 176  
Jefferson City, Missouri 65102

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

Mr. Dan I. Bolef, President  
Kay Drey, Representative  
Board of Directors Coalition for the  
Environment  
6267 Delmar Boulevard  
University City, MO 63130

Mr. Lee Fritz, Presiding Commissioner  
Callaway County Court House  
10 East Fifth Street  
Fulton, MO 65151

Mr. David E. Shafer  
Superintendent, Licensing  
Regulatory Affairs  
AmerenUE  
P.O. Box 66149, MC 470  
St. Louis, MO 63166-6149

Mr. Keith D. Young  
Manager, Regulatory Affairs  
AmerenUE  
P.O. Box 620  
Fulton, MO 65251

Mr. Scott Clardy, Director  
Section for Environmental Public Health  
P.O. Box 570  
Jefferson City, MO 65102-0570

Diablo Canyon Power Plant, Units 1 and 2

cc:

NRC Resident Inspector  
Diablo Canyon Power Plant  
c/o U.S. Nuclear Regulatory Commission  
P.O. Box 369  
Avila Beach, CA 93424

Mr. Pete Wagner  
Sierra Club California  
2650 Maple Avenue  
Morro Bay, California 93442

Ms. Nancy Culver  
San Luis Obispo  
Mothers for Peace  
P.O. Box 164  
Pismo Beach, CA 93448

Chairman  
San Luis Obispo County Board of  
Supervisors  
Room 370  
County Government Center  
San Luis Obispo, CA 93408

Mr. Truman Burns  
Mr. Robert Kinoshian  
California Public Utilities Commission  
505 Van Ness, Room 4102  
San Francisco, CA 94102

Diablo Canyon Independent Safety  
Committee  
ATTN: Robert R. Wellington, Esq.  
Legal Counsel  
857 Cass Street, Suite D  
Monterey, CA 93940

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
Harris Tower & Pavillion  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

Richard F. Locke, Esq.  
Pacific Gas & Electric Company  
P.O. Box 7442  
San Francisco, CA 94120

Mr. David H. Oatley, Vice President  
and General Manager  
Diablo Canyon Power Plant  
P.O. Box 56  
Avila Beach, CA 93424

City Editor  
The Tribune  
3825 South Higuera Street  
P.O. Box 112  
San Luis Obispo, CA 93406-0112

Mr. Ed Bailey, Radiation Program Director  
Radiologic Health Branch  
State Department of Health Services  
P.O. Box 942732 (MS 178)  
Sacramento, CA 94234-7320

Mr. James D. Boyd, Commissioner  
California Energy Commission  
1516 Ninth Street (MS 31)  
Sacramento, CA 95814

Mr. James R. Becker, Vice President  
Diablo Canyon Operations  
and Station Director  
Diablo Canyon Power Plant  
P.O. Box 3  
Avila Beach, CA 93424

Wolf Creek Generating Station

cc:

Jay Silberg, Esq.  
Shaw, Pittman, Potts & Trowbridge  
2300 N Street, NW  
Washington, D.C. 20037

Site Vice President  
Wolf Creek Nuclear Operating Corporation  
P.O. Box 411  
Burlington, KS 66839

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-7005

Superintendent Licensing  
Wolf Creek Nuclear Operating Corporation  
P.O. Box 411  
Burlington, KS 66839

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
P.O. Box 311  
Burlington, KS 66839

U.S. Nuclear Regulatory Commission  
Resident Inspectors Office  
8201 NRC Road  
Steedman, MO 65077-1032

Chief Engineer, Utilities Division  
Kansas Corporation Commission  
1500 SW Arrowhead Road  
Topeka, KS 66604-4027

Office of the Governor  
State of Kansas  
Topeka, KS 66612

Attorney General  
120 S.W. 10<sup>th</sup> Avenue, 2<sup>nd</sup> Floor  
Topeka, KS 66612-1597

County Clerk  
Coffey County Courthouse  
110 South 6<sup>th</sup> Street  
Burlington, KS 66839

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

Palo Verde Generating Station, Units 1, 2, and 3

Phoenix, AZ 85004

cc:

Mr. Steve Olea  
Arizona Corporation Commission  
1200 W. Washington Street  
Phoenix, AZ 85007

Douglas Kent Porter  
Senior Counsel  
Southern California Edison Company  
Law Department, Generation Resources  
P.O. Box 800  
Rosemead, CA 91770

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
P. O. Box 40  
Buckeye, AZ 85326

Regional Administrator, Region IV  
U.S. Nuclear Regulatory Commission  
Harris Tower & Pavillion  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

Chairman  
Maricopa County Board of Supervisors  
301 W. Jefferson, 10th Floor  
Phoenix, AZ 85003

Mr. Aubrey V. Godwin, Director  
Arizona Radiation Regulatory Agency  
4814 South 40 Street  
Phoenix, AZ 85040

Mr. Craig K. Seaman, Director  
Regulatory Affairs/Nuclear Assurance  
Palo Verde Nuclear Generating Station  
P.O. Box 52034  
Phoenix, AZ 85072-2034

Mr. Hector R. Puente  
Vice President, Power Generation  
El Paso Electric Company  
2702 N. Third Street, Suite 3040

Mr. John Taylor  
Public Service Company of New Mexico  
2401 Aztec NE, MS Z110  
Albuquerque, NM 87107-4224

Ms. Cheryl Adams  
Southern California Edison Company  
5000 Pacific Coast Hwy Bldg DIN  
San Clemente, CA 92672

Mr. Robert Henry  
Salt River Project  
6504 East Thomas Road  
Scottsdale, AZ 85251

Terry Bassham, Esq.  
General Counsel  
El Paso Electric Company  
123 W. Mills  
El Paso, TX 79901

Mr. John Schumann  
Los Angeles Department of Water & Power  
Southern California Public Power Authority  
P.O. Box 51111, Room 1255-C  
Los Angeles, CA 90051-0100

Brian Almon  
Public Utility Commission  
William B. Travis Building  
P. O. Box 13326  
1701 North Congress Avenue  
Austin, TX 78701-3326

July 2003