

January 18, 2006

Mr. Richard M. Rosenblum
Chief Nuclear Officer
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92674-0128

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION (SONGS), UNITS 2 AND 3
RE: CORRECTION TO RESPONSE TO NRC BULLETIN 2003-01,
"POTENTIAL IMPACT OF DEBRIS BLOCKAGE ON EMERGENCY SUMP
RECIRCULATION AT PRESSURIZED-WATER REACTORS" (TAC NOS.
MB9610 AND MB9611)

Dear Mr. Rosenblum:

In its letter dated December 15, 2005, the Nuclear Regulatory Commission (NRC) staff issued its evaluation of your responses to NRC Bulletin 2003-01. Your responses to Bulletin 2003-01 were in your letter dated August 1, 2003, as supplemented by letters dated October 13, 2004, and September 8, 2005.

In the evaluation, you have brought to our notice the following 3 inconsistencies: 1) Clarifying the inspection process in item 4 of Page 2 - not to imply that all 70 plus Containment Cleanliness inspectors actually perform inspections; 2) Correcting item 6 on Page 4 - incorporating the correct Floating Step number; and 3) Correcting the Agencywide Documents Access Management System Accession Number for the Southern California Edison e-mail response of October 19, 2005, on Page 5.

We are enclosing pages 2, 4, and 5 of the evaluation which have the corrections incorporated, and a vertical bar on the right-hand side of the page showing where the changes were made.

Sincerely,

/RA/

N. Kalyanam, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-361 and 50-362

Enclosure: Pages 2, 4, and 5 of the Evaluation
dated December 15, 2005

cc w/encl: See next page

Mr. Richard M. Rosenblum
Chief Nuclear Officer
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92674-0128

January 18, 2006

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION (SONGS), UNITS 2 AND 3
RE: CORRECTION TO RESPONSE TO NRC BULLETIN 2003-01,
"POTENTIAL IMPACT OF DEBRIS BLOCKAGE ON EMERGENCY SUMP
RECIRCULATION AT PRESSURIZED-WATER REACTORS" (TAC NOS.
MB9610 AND MB9611)

Dear Mr. Rosenblum:

In its letter dated December 15, 2005, the Nuclear Regulatory Commission (NRC) staff issued its evaluation of your responses to NRC Bulletin 2003-01. Your responses to Bulletin 2003-01 were in your letter dated August 1, 2003, as supplemented by letters dated October 13, 2004, and September 8, 2005.

In the evaluation, you have brought to our notice the following 3 inconsistencies: 1) Clarifying the inspection process in item 4 of Page 2 - not to imply that all 70 plus Containment Cleanliness inspectors actually perform inspections; 2) Correcting item 6 on Page 4 - incorporating the correct Floating Step number; and 3) Correcting the Agencywide Documents Access Management System Accession Number for the Southern California Edison e-mail response of October 19, 2005, on Page 5.

We are enclosing pages 2, 4, and 5 of the evaluation which have the corrections incorporated, and a vertical bar on the right-hand side of the page showing where the changes were made.

Sincerely,

/RA/

N. Kalyanam, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-361 and 50-362

Enclosure: Pages 2, 4, and 5 of the Evaluation
dated December 15, 2005

cc w/encl: See next page

DISTRIBUTION:

PUBLIC	LPLIV Reading	RidsOgcRp
RidsAcrsAcnwMailCenter	RidsNrrDorLplg (DTerao)	RidsNrrPMMJDonohew
RidsNrrLALFeizollahi	RidsRgn4MailCenter (TPruett)	RArchitzel
DSolorio	MKowal	LWhitney
RidsNrrPMAWang	THafera	RidsNrrPMNKalyanam

Accession No.: ML060250373

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NRR/LPL4/BC
NAME	NKalyanam	LFeizollahi	DTerao
DATE	1/18/06	1/18/06	1/18/06

OFFICIAL RECORD COPY

(1) operator training on indications of and responses to sump clogging; (2) procedural modifications, if appropriate, that would delay the switchover to containment sump recirculation (e.g., shutting down redundant pumps that are not necessary to provide required flows to cool the containment and reactor core, and operating the CSS intermittently); (3) ensuring that alternative water sources are available to refill the refueling water storage tank (RWST) or to otherwise provide inventory to inject into the reactor core and spray into the containment atmosphere; (4) more aggressive containment cleaning and increased foreign material controls; (5) ensuring containment drainage paths are unblocked; (6) ensuring sump screens are free of adverse gaps and breaches.

You stated in your bulletin response of August 1, 2003, that you have implemented the following measures:

- (1) Under CEN-152, Combustion Engineering (CE) Emergency Procedure Guidelines (EPGs), operators are provided with safety injection (SI) throttle stop criteria predicated on satisfying certain plant conditions (e.g., reactor coolant system (RCS) sub-cooling, pressurizer level), and operator training re-enforces the need for timely throttle/stop actions - ICM category #1;
- (2) Under four San Onofre Nuclear Generating Station (SONGS) Operating Instructions, operators are provided with four methods for filling the refueling water storage tank (RWST): blended makeup, spent fuel pool crosstie, primary tanks, and the opposite unit RWST - ICM category #3;
- (3) Step 15 of the Functional Recovery procedure directs operators to initiate makeup as required to the RWST, while Floating Step 20 of the Emergency Operating Instructions (EOIs) directs operators to maintain RWST level greater than 19 percent and evaluate the need for makeup to the RWST (with additional direction provided in the Technical Support Center Guideline "MAINTAIN RWST LEVEL") - ICM category #3;
- (4) A Containment Cleanliness and Loose Debris Program which provides for "clean as you go" work activities, cleaning of accessible areas before containment closeout, Health Physics Manager containment cleanliness inspections, and containment cleanliness inspections from a current pool of over 70 qualified representatives from a broad divisional cross-section of station personnel - ICM category #4;
- (5) A coatings assessment program for SONGS Units 2 & 3 Service Level 1 coatings used in containment, which are procured, applied, and maintained by Southern California Edison (SCE) or their contractor to comply with American National Standards Institute (ANSI) N101.2 and Regulatory Guide 1.54 (with certain exceptions discussed in your submittal) - ICM category #4;
- (6) Condition assessment walkdowns of Service Level 1 coatings inside containment each refueling outage, with repair or repair scheduling as degraded or nonconforming coatings are identified - ICM category #4;
- (7) A multi-discipline working group, the San Onofre Coatings Inspection Team, provides continuous assessment of the SONGS coatings program to ensure continued compliance with regulatory and industry standards - ICM category #4;

- (1) COA A1a, "Operator Action to Secure One Containment Spray Pump Before Recirculation Alignment," concluding that for single failure/restart demand failure, potential operator distraction, offsite dose, and containment pressure and temperature considerations there would be a net increase in risk from this COA and it would not be implemented;
- (2) COA A1b, "Operator Action to Secure Both Spray Pumps," concluding that this COA would not be implemented for the same reasons as for COA A1a above;
- (3) COA A2, "Manually Establish One Train of Sump Recirculation Prior to Automatic Actuation," concluding that this COA would require operators to manually override the automatic safety function wherein Low Pressure Safety Injection Pumps automatically start to supply borated water to the RCS from the RWSTs, resulting in a net increase in risk. Further, this action would result in a reduced water level in containment due to the inventory remaining in the RWST, and would also result in all debris being drawn into the single operating sump increasing head-loss for the operating recirculation pump. Finally, containment spray drawn from the sump has a reduced cooling effect than spray drawn from an RWST. Therefore, it was decided that this COA would not be implemented;
- (4) COA 3-CE, "Terminate One Train of Safety Injection After Recirculation Alignment," concluding that this COA would require operators to manually override the automatic safety function wherein High Pressure Safety Injection Pumps automatically start to supply borated water to the RCS from the RWSTs, and for single failure/restart demand failure and potential operator distraction reasons this COA would not be implemented;
- (5) COA 4, "Early Termination of One Low Pressure Safety Injection (LPSI)/Residual Heat Removal (RHR) Pump Prior to Recirculation Alignment," concluding that in securing an LPSI pump the operators would be required to override an automatic safety function. Further, for single failure/restart demand failure and potential operator distraction reasons there would be a net increase in risk and this COA would not be implemented;
- (6) COA 5, "Refill of Refueling Water Storage Tank," concluding that this step was incorporated in "Floating Step 20, Monitor RWST Level" in SONGS procedure SO23-12-11, "EOI Supporting Attachments," Attachment 2 - ICM category #3;
- (7) COA 6, "Inject More Than One RWST Volume From a Refilled RWST or by Bypassing the RWST," concluding that the portion of this COA relating to injecting more than one RWST volume from a refilled RWST was incorporated into SONGS procedure SO23-12-11, "EOI Supporting Attachments," Attachment 14, "Recirculation Actuation Signal (RAS) Operation," Step 4a. However, SCE declined to implement the portion of COA 6 dealing with bypassing the RWST based on it being considered a net risk increase - ICM category #1;
- (8) COA 7, "Provide More Aggressive Cooldown and Depressurization Following a Small Break LOCA [loss-of-coolant accident]," concluding that this COA was incorporated into SONGS procedure SO23-12-11, "EOI Supporting Attachments," Attachment 14, "Recirculation Actuation Signal (RAS) Operation," Step 8 - ICM category #2;

- (9) COA 8-CE, "Provide Guidance on Symptoms and Identification of Containment Sump Blockage," concluding that this COA was incorporated into SONGS procedure SO23-12-11, "EOI Supporting Attachments," Attachment 2, "Floating Steps FS-22, "MONITOR ECCS Pump(s) Suction after RAS" - ICM category #1;
- (10) COA 9-CE, "Contingency Actions in Response to: Containment Sump Blockage, Loss of Suction, and Cavitation," concluding that this COA was incorporated into SONGS procedure SO23-12-11, "EOI Supporting Attachments," Attachment 2, "Floating Steps," FS-22, "MONITOR ECCS Pump(s) Suction after RAS." (Actions to be taken should the pumps show unstable flow, discharge pressure or motor amperage, with the containment sump recirculation attachment also enhanced to address this issue) - ICM category #1;
- (11) COA 10, "Early Termination of One Train of HPSI Injection Prior to Recirculation Alignment," concluding that this COA would require operators to manually override the automatic safety function wherein HPSI pumps automatically start to supply borated water to the RCS from the RWSTs, and for single failure/restart demand failure and potential operator distraction reasons this COA would not be implemented;
- (12) COA 11, "Prevent or Delay Containment Spray for Small Break LOCAs (<1.0 Inch Diameter) in Ice Condenser Plants," concluding that this COA was not applicable to the SONGS non-ice condenser containment design.

In an October 19, 2005, e-mail to NRC (Agencywide Documents Access Management System (ADAMS) Accession No. ML053430087), SCE stated that, although it still considered RWST bypass to represent a net risk increase and would not proceduralize this action in its emergency operating procedures (COA 6), if such a bypass were needed in a beyond design-basis LOCA situation to inject water into the RCS to protect the core, such an action would be considered in responding to the LOCA. SCE stated that sources would be from the spent fuel pool, the unaffected unit RWST, the condensate system, fire service water, or other available water volumes - ICM category #3.

The NRC staff has considered your Option 2 response for compensatory measures that were to have been implemented to reduce the interim risk associated with potentially degraded or nonconforming ECCS and CSS recirculation functions. Based on your response, the NRC staff considers your actions to be responsive to and meet the intent of Bulletin 2003-01. Please retain any records of your actions in response to Bulletin 2003-01, as the NRC staff may conduct subsequent inspection activities regarding this issue.

Should you have any questions, please contact me at 301-415-1480 or the lead PM for this issue, Alan Wang at 301-415-1445.

Sincerely,

/RA/

N. Kalyanam, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-361 and 50-362

cc: See next page

San Onofre Nuclear Generating Station
Units 2 and 3

cc:

Mr. Daniel P. Breig
Southern California Edison Company
San Onofre Nuclear Generating Station
P. O. Box 128
San Clemente, CA 92674-0128

Mr. Douglas K. Porter, Esquire
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, CA 91770

Mr. David Spath, Chief
Division of Drinking Water and
Environmental Management
P. O. Box 942732
Sacramento, CA 94234-7320

Chairman, Board of Supervisors
County of San Diego
1600 Pacific Highway, Room 335
San Diego, CA 92101

Eileen M. Teichert, Esq.
Supervising Deputy City Attorney
City of Riverside
3900 Main Street
Riverside, CA 92522

Mr. Gary L. Nolff
Power Projects/Contracts Manager
Riverside Public Utilities
2911 Adams Street
Riverside, CA 92504

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

Mr. Michael Olson
San Diego Gas & Electric Company
P.O. Box 1831
San Diego, CA 92112-4150

Mr. Ed Bailey, Chief
Radiologic Health Branch
State Department of Health Services
Post Office Box 997414 (MS7610)
Sacramento, CA 95899-7414

Resident Inspector/San Onofre NPS
c/o U.S. Nuclear Regulatory Commission
Post Office Box 4329
San Clemente, CA 92674

Mayor
City of San Clemente
100 Avenida Presidio
San Clemente, CA 92672

Mr. James T. Reilly
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92674-0128

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

Mr. Ray Waldo, Vice President
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92764-0128

Mr. Brian Katz
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92764-0128

Mr. Steve Hsu
Department of Health Services
Radiologic Health Branch
MS 7610, P.O. Box 997414
Sacramento, CA 95899

Mr. A. Edward Scherer
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92674-0128

November 2005