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MPC&D 08-034

May 1, 2008

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

Docket No. 50-312  
Rancho Seco Nuclear Generating Station  
License No. DPR-54

**SPECIAL REPORT REGARDING A FIRE IN THE RANCHO SECO REACTOR BUILDING**

Attention: John Hickman

The Sacramento Municipal Utility District (the District) hereby submits a 30-day follow-up report to a Notification of Unusual Event that occurred on April 5, 2008 at the decommissioning Rancho Seco nuclear plant.

On Saturday April 5 there was a fire in the Rancho Seco Reactor Building. Rancho Seco is defueled with all nuclear fuel stored in a 10 CFR Part 72 licensed Independent Spent Fuel Storage Installation (ISFSI) adjacent to the 10 CFR Part 50 licensed plant site. During the course of the fire the on-shift ISFSI Technician (the senior person on site during weekends and backshift) declared and subsequently closed a Notification of Unusual Event (Unusual Event). Communications errors and errors in implementing the emergency plan resulted in offsite notifications to the County, State, and NRC not being made within 1 hour, and District management not being notified as required by the emergency plan.

On Monday, April 7 Rancho Seco management determined that an Unusual Event had been declared and closed out on April 5. Accordingly on April 7 the District notified the NRC Operations Center, as well as the State and County.

The attached report provides a summary description of the event, the causes, significant corrective actions taken, and the schedule for completing additional corrective actions. The full incident report is contained in the Rancho Seco corrective action program documents DQ 08-10 and DQ 08-11.

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If you, or members of your staff, have questions requiring additional information or clarification, please contact Bob Jones at (916) 732-4843.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Redeker". The signature is fluid and cursive, with the first name "Steve" and last name "Redeker" clearly distinguishable.

Steve Redeker  
Manager, Plant Closure & Decommissioning

Cc: NRC, Region IV

Attachment

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### Description of the Event

On Saturday April 5, 2008, a demolition subcontractor was using a cutting torch to remove a non-structural beam in the Reactor Building as part of an ongoing effort to remove the concrete and steel from inside the nearly empty Reactor Building. Slag from the cutting operation fell behind an elevator shaft wall area that contained concrete rubble covering and concealing some combustible material.

At approximately 10:20 AM the posted fire watch noticed smoke coming from behind the wall and attempted to extinguish the fire with a ¾ inch hose that was provided for the fire watch.

At approximately 10:30 AM, the Reactor Building Radiation Protection (RP) Technician notified the on-shift ISFSI Technician (the senior District person on site during weekends and backshift) that there was a fire in the Reactor Building. The ISFSI Technician responded immediately to the scene to access the situation. He took immediate action to evacuate the area, improve efforts to extinguish the fire, turn off the reactor building ventilation to reduce airflow to the fire, and ensure that air samples were being taken to assess potential airborne radioactivity.

The ISFSI Technician and contractor personnel determined that a larger 1½" fire hose that was being used for non-fire purposes in support of decommissioning was readily available and could be used from outside the building. The ISFSI Technician determined that, because of the location and size of the fire, outside agency assistance was not required. The fire hose was run to the Reactor Building grade level hatch where water was applied from outside the Reactor Building. The ISFSI Technician implemented Casualty Procedure OP-C.48 "Fire Casualty Procedure" and began placing telephone calls to off-shift management to inform them of the situation, however his initial series of calls were unanswered and he left messages.

During the fire event some smoke exited the Reactor Building access hatch. The RP Technician monitored the continuous air sampler at the Reactor Building hatch for airborne radioactivity. The air samples revealed no contamination above background.

Overall, the response to the fire was good. The fire system operated as designed. Portable air samplers that were installed for the reactor building concrete removal project were operating continually which allowed for timely evaluation of airborne radiological conditions. Portable radios, counting equipment, and the whole body counter operated properly. The on-call conference telephone system and pager activation system (used as described later) worked effectively. The response of the onsite RP Technicians was timely and effective. There were timely air sample change outs and analysis. All individuals that were in the reactor building were given whole body counts and there was no uptake of radioactive contamination. Response of offsite RP personnel call-out was timely. Fire suppression efforts were timely and effective. Water was applied

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intermittently; however, given the deep-seated nature of the fire and difficulty observing the fire, which was covered by concrete rubble, it was difficult to determine precisely when the fire was out. The fire was out, or nearly out, sometime between 11:30 AM and 12:30 PM.

Due to his inability to contact offsite management and the continuing smoke, at approximately 11:40 AM and out of an abundance of caution, the ISFSI Technician declared a Notification of Unusual Event (Unusual Event) in accordance with Emergency Plan Implementing Procedure, EPIP-01 "Emergency Action," which allows discretionary declaration of an event if the event does not fall into one of the predefined conditions.

Although an Unusual Event was declared, communications errors and failure to use the required EPIP checklist resulted in inadequate implementation of several required actions including failure to make notifications to the County, State, and NRC within one hour and lack of pager callout notification of the Rancho Seco on-call Emergency Response Organization (ERO) and notification to District management.

At approximately 11:45 AM the ISFSI Tech successfully called the on-call Emergency Coordinator (EC) and related the situation status, the need for additional Radiation Protection support and discussed an "emergency" but did not explicitly state that an Unusual Event had been declared or the need for on-call ERO personnel to respond. The on-call EC did not know that an Unusual Event had been declared. The on-call EC subsequently dispatched additional RP support to the site.

At approximately 11:58 AM the on-call Communicator, responding to the ISFSI Techs call, called the ISFSI Tech and had a conversation similar to the discussion with the on-call EC. The on-call Communicator also did not know that an Unusual Event had been declared. Subsequently the on-call Communicator activated the paging system to arrange for a conference call with management personnel including the on-call ERO.

At approximately 12:50 PM the conference call was held including the ISFSI Technician and on-call management and corporate safety, fire protection, security, and emergency planning staff to review the status and evaluate the need for additional actions. It was determined that weekend work in the Reactor Building would be stopped and a continuous fire watch posted until Monday morning. There was a discussion of the various options in the Emergency Plan including the criteria to declare an Unusual Event; however, that an Unusual Event had been declared was not explicitly stated. Shortly after the call ended the ISFSI Technician closed out the Unusual Event but did not use the closeout checklist.

On Monday, April 7, Rancho Seco management determined that an Unusual Event had been declared and closed out on April 5. Accordingly, on April 7, the District notified the NRC Operations Center, as well as the State and County.

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In accordance with the corrective action program Potential Deviations from Quality (PDQ) 08-010 and PDQ 08-011 were initiated and subsequently classified as Deviations from Quality (DQ). A post event critique and investigation interviews were conducted and a detailed investigation report was prepared.

### **Cause**

The investigation into the incident revealed three fundamental issues:

1. There was a fire in the Reactor Building.
2. Once the Unusual Event was declared the Emergency Plan was not implemented properly:
3. The ISFSI Technician was unable to contact offsite management in a timely manner which lead him to declare an Unusual Event as a discretionary measure.

The cause of each of these issues is discussed below.

#### **Fire**

Ongoing housekeeping practices were inadequate. Allowing combustible materials to be covered up by concrete rubble set the stage for a slag induced fire.

#### **Improper Emergency Plan Implementation**

District management did not assure that training and drills adequately emphasized backshift implementation of the Emergency Plan.

#### **Notification of Management**

There was no formal process to rapidly contact management in a non-Emergency Plan situation.

### **Significant Corrective Actions Completed**

The following provides a summary of significant corrective actions to address the causes of the issues identified above. Other unrelated improvements and actions have been made or are underway.

1. The demolition subcontractor, with improved District oversight, took the following corrective actions, all of which were completed by April 8, 2008:
  - Removed all combustible debris from hot work. (Completed 4-8-08)

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- Developed an improved housekeeping policy and procedure for housekeeping requirements inside the Reactor Building..(Completed 4-8-08)
  - Performed safety training prior to the start of work to instruct employees in housekeeping and emergency response procedures (Completed 4-7-08).
  - Ensured compliance with the requirements of the issued hot work permit. (Completed 4-8-08)
  - Future hot work will be documented daily as to the condition of the area prior to the start of work. The inspection will be documented by fire watch personnel. (Implemented 4-8-08 and is ongoing)
  - All remaining combustible material in the remote pile in the Reactor Building is netted and covered with fire blankets. Combustible material will not be allowed within 50 feet of any hot work area. (Completed 4-8-08)
2. All ISFSI Technicians, ERO members, and Security Shift Supervisors received training covered the Emergency Plan, EPIP's, emergency classification, the importance clear and explicit communications, and the proper use of checklists, and were required to pass a proficiency test on emergency plan requirements. (All but one person were trained as of 4-10-08. The one individual who did not receive the training was not placed in his on-call ERO position until he completed his training, which was on 4-23-08)
  3. ISFSI Technicians were trained on procedure compliance and the importance of following procedures. (Completed 4-23-08)
  4. Revised OP-C.48 to direct the ISFSI Technician to call for outside agency assistance for any fire that cannot be extinguished with a portable fire extinguisher. Trained ISFSI Technicians on the revised procedure. (Completed 5-1-08)

### **Additional Significant Corrective Actions and Schedule**

1. Develop and train on backshift Emergency Plan implementation checklists and perform an unannounced backshift drill. (By 6-20-08)
2. Emphasize backshift Emergency Plan implementation in training and drills. (First drill by 6-20-08, then ongoing.)
3. Develop and train on a formal process to notify management in a non-Emergency Plan situation. (By 5-30-08)