ENCLOSURE 1

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUN 26 1985

MEMORANDUM FOR: Division of Licensing Project Managers

FROM: Hugh L. Thompson, Jr., Director
Division of Licensing

SUBJECT: OPERATING REACTORS PROJECT MANAGER SURVEY

One of the results of reviewing the recent incident involving the feedwater systems at Davis-Besse is the importance of periodically taking a broad overview of the regulatory issues that remain open at operating reactors. In order to ensure that management is aware of other long standing situations at operating reactors which have been difficult to resolve,I request that you provide your Branch Chief, by COB July 2, with an identification of any safety related systems or systems important to safety for which there are questions or concerns with respect to design, performance or reliability. In addition, please identify any recommendations for regulatory action that you consider safety significant and where significant dialogue between the staff and/or the licensee has taken place without adequate resolution being reached. Also identify any significant safety issues which you may be concerned about that have not been identified by the above. The attached survey form is provided for your response. A response is requested for each plant even if you believe no significant issues remain open. In this case please identify the three most important licensing actions under review. Handwritten responses are acceptable. If you need any additional information concerning this please contact your Branch Chief or myself.

Hugh L. Thompson, Jr., Director
Division of Licensing

Enclosure:
As Stated

cc: H. Denton
DL BCs
DL ADs
F. Miraglia

# ORPM SURVEY

PLANT NAME_____

PROJECT MANAGER_____

1. Safety related systems or systems important to safety for which there are questions or concerns with respect to design, performance or reliability:

2. Safety significant regulatory actions where significant dialogue between the staff and/or the licensee has taken place without adequate resolution.

3. Any other significant safety issues of concern.

4. The three most important licensing actions under review if none identified above.

ENCLOSURE 2

# RESULTS OF ORPM SURVEY

## Browns Ferry 1, 2, 3

As discussed in SECY 85-231, the staff has concerns about performance deficiences at Browns Ferry and the other TVA facilities as indicated by a sustained and consistent history of poor performance and from a number of more recent events. All Browns Ferry units are currently shut down and will not be restarted until TVA and the NRC are satisfied with the corrective actions being taken.

TVA's Nuclear Safety Review Staff (NSRS) issued an internal report on June 27, 1984 which raised concerns about the performance and reliability of the High Pressure Coolant Injection (HPCI) systems for each Browns Ferry unit. For several years, TVA has had a task force whose objective has been to improve HPCI system performance. Upon receipt of the report, Region II sent a special team of inspectors to Browns Ferry to independently evaluate the issue. Region II concluded that there were no violations or deviations. By letter dated April 26, 1985, the Honorable Morris K. Udall requested NRC comments on the NSRS report to which we responded by letter dated July 10, 1985. As stated therein, the HPCI systems at Browns Ferry do not represent an undue risk and the present situation does not preclude startup and operation of a unit. The situation does indicate that we closely scrutinize TVA's activities to resolve identified problems with the HPCI systems.

The fire at Browns Ferry in March 1975 identified the need for increased fire protection at Browns Ferry and other nuclear plants. Many modifications were made at Browns Ferry prior to approving restart of the units in August 1976. Subsequently, we evaluated all other operating plants; these safety evaluations were the basis for plant modifications to conform to Appendix R. Because Browns Ferry was not included in these subsequent evaluations, when Appendix R was issued, TVA needed more time than other licensees to determine what modifications were required. The proposed modifications are under review by NRC. The end result is that the fire protection modifications at Browns Ferry are not being implemented as soon as at many other facilities. With the compensatory measures that TVA has proposed, the delay in implementing these fire protection modifications does not pose a significant risk to public health and safety and should not preclude startup and operation of the Browns Ferry units while the modifications are in progress. It is, however, an issue that requires close scrutiny by NRC.

Browns Ferry has been very slow compared to other licensees in implementing some NRC-required modifications. The problem apparently stems from Browns Ferry's unique three-plants-under-one-roof physical layout, for which a high level of modification activity is difficult to plan and control. Most of the major, significant projects have been or will be completed prior to restart of the units (e.g., upgrading the integrity of the Mark I torus, environmental qualification of electrical equipment, modifications to the scram discharge system, etc.). The remaining modifications should not preclude startup or operation of the units but do warrant close scrutiny by NRC to ensure TVA is diligently pursuing implementation.

Browns Ferry has a history of excessive and recurring reportable events and enforcement actions. These items are attributed to human factors concerns (i.e., management overview, operator training, operator attitude, salary limitations, etc.). These problems are under NRC review for proposed long-term action. The licensee has committed the facilities to stay shutdown until capable of regulatory compliance. An NRC review team will evaluate Browns Ferry readiness-to-restart.

## Fort St Vrain

A review of the list of open issues and ongoing safety reviews for Fort St. Vrain was conducted in response to H. Thompson's June 26, 1985 memorandum. The focus of the review was on determining the overall significance of the sum total of all the items identified and whether the July 1985 restart of the plant should be delayed because of these or any other ongoing safety reviews for the plant.

The specific items identified in response to the June 26, 1985 memorandum were originally identified in the staff's October 1984 Assessment Report and the last SALP evaluation. They are:

- Emergency Diesel Generators
- Firewater System (Safeguards Protection)
- Station Batteries
- Control Rod Drive Mechanisms
- Control Rod Position Instrumentation
- Helium Circulators
- Management Control
- Building 10 Construction
- Chlorides in Reactor
- Fire Protection (Appendix R)
- ISI/IST
- PCRV Integrity (Tendons and Liner)
- Overall Plant Tech. Spec. Upgrade
- Liquid Effluent Releases
- Equipment Qualification
- Moisture Ingress
- Cracked Fuel Blocks

The Overall conduct of operations at Fort St. Vrain, including the licensee's handling of the issues listed above, has been under careful review by the staff since June 23, 1984 when the plant was shut down as a result of failures in the control rod drive mechanisms. In all cases, the issues are under active review by the licensee and the staff, with schedule goals for completion having been established.

All the reviews for individual issues have resulted in a finding that the plant can be restarted and operated safely with certain restrictions. The most significant restriction imposed is a limitation to no greater than 15% power operation pending the licensee's completion of equipment qualification studies related to verifying the qualified life and operability time for safety-related equipment. Examples of other less significant restrictions include a roving fire watch pending completion of modifications to the plant fire protection system and interim operating procedures to protect the control rod drive mechanisms from overtravel damage.

While the staff has concluded that none of the individual problems identified at Fort St. Vrain were significant enough to prevent a restart of the plant, they have raised concerns about the overall conduct of operations at the plant. These concerns were reflected in the staff's October 1984 Assessment Report and the last SALP evaluation wherein the plant was rated Category 3 in 5 out of 12 rating categories, including Plant Operations. To address the concerns, the staff has required the licensee to commission a third party review of their conduct of operations and to commit to correct the deficiencies identified. This third party review has been completed and the licensee has initiated a Nuclear Performance Enhancement Program. The staff has performed a preliminary review of this program and agrees that it should improve the conduct of operations at Fort St. Vrain. Our final review is scheduled to be completed by the end of this month.

In summary, many valid safety issues for Fort St. Vrain have been identified which must, and are, being addressed by the licensee and the NRC. Pending final resolution, and in some cases, modifications to the plant, operation must be restricted. The appropriate restrictions and interim measures have been committed to by the licensee as a condition for restart. These restrictions and licensee commitments have been documented in safety evaluations by the staff and implemented by Region IV through a Confirmatory Action Letter that was issued prior to plant restart. Based on all of the above, all of the identified issues are being adequately addressed by ongoing NRC and licensee activities.

Rancho Seco

As a result of last years SALP report (issued June 20, 1984) and meetings between Region V and the Sacramento Municipal Utility District (SMUD) Board of Directors the Board contracted with LRS Consultants to do an assessment of SMUD management of the Rancho Seco Plant. On November 30, 1984 the LRS Consultants issued a report on their assessment. The report was very frank and was in substantial agreement with NRC's evaluation of SMUD. The report made a number of significant and extensive recommendations to improve SMUD management performance. Over the last year, the licensee has been implementing these recommendations.

The current startup problems are in general due to poor QA/QC performance by the licensee, some of the problem QA/QC performance going back several years. The licensee has shown a change in attitude during the current outage and is agressively pursuing resolutions to these problems. The licensee has voluntarily delayed startup of the plant until these resolutions are acceptable to both the utility and the NRC staff. We have been closely monitoring the licensee's activities. For example, with regard to the Reactor Trip Breakers (RTB) problem the licensee, with the help of GE (Atlanta) and B&W re-certified all of the installed RTBs. Prior to proceeding with plant startup a conference call was held between the licensee, NRR and Region V in which the results of the re-certification was discussed and NRR and Region V indicated that they were in agreement with the licensee that startup can proceed. Augmented receiving inspection will be implemented in the future to assure that problems with as-received RTBs are identified prior to installation.

The licensee initiated an inspection program of Class 1 piping supports during the current shutdown when it concluded that the recent non isolatable high point vent leak was caused by inadequate support of the high point vent piping that resulted from earlier QA/QC breakdowns from 1975 - 1983. The licensee has completed inspection of all supports of modifications made after the 1979 and 1980 inspections that were conducted in response to IEB-79-14 on Seismic Analysis for As-Built Piping Systems. Inspection teams headed by a pipe support stress analyst have recently completed inspection of about 349 supports. An IE - Region team accompanied some of licensee's teams on a number of their walkdowns. In addition, as a result of discussions with IE and Region V regarding the extent of their IEB 79-14 inspections the licensee has expanded its program to include inspecting all of the Class 1 piping system supports that were not inspected in the 1979 and 1980 walk-downs. This will include about 270 piping systems containing about 3000 supports. The effort associated with the pipe support inspections and modifications to correct deficiencies found are expected to delay plant startup until about August 15, 1985. The licensee will not restart the plant until they and the NRC are satisfied that any pipe support problems have been resolved.

Region V and the Resident Inspectors have been closely monitoring the expanded inspection program. In addition, members of the NRR, IE and Region V staff attended the licensee's Management Safety Review Committee (MSRC) meeting at which the startup problems, including the pipe support problem, and approaches to resolving the problems were discussed and decided upon. Also discussed during the meeting was additional training for QA personnel to improve quality at Rancho Seco. As a result of an NRR, IE and Region V management team meeting with the licensee management and the SMUD Board of Directors, the licensee has committed to provide a Refueling Outage Restart Report that will detail the problems encountered during the outage and the proposed short-term and long-term corrective actions.

## SAN ONOFRE UNIT 1 (SONGS 1)

SONGS-1 returned to service in November 1984 after being shut down for nearly three years due to seismic design concerns. During much of this shutdown, the utility was not certain if plant restart would be economically possible; hence, many modifications and analyses were deferred.

The licensee utilizes an Integrated Living Schedule methodology to schedule plant modifications in a manner which maximizes improvements in safety in a cost effective manner. At present, the licensee has committed to complete analyses and install equipment to resolve the following long-standing regulatory issues prior to restart from the Cycle IX refueling outage scheduled to begin on November 30, 1985:

(1) Long-term seismic upgrading - analysis and hardware implementation,

(2) Fire Protection - design and installation of a dedicated safe shutdown system and other Appendix R modifications, and

(3) Equipment Qualification - qualification or replacement of 52 pieces of equipment.

The installation of a third auxiliary feedwater pump will take place during the Cycle IX outage as part of the fire protection modifications. Additional modifications to provide all equipment needed for a third auxiliary feedwater train will be completed during the Cycle X refueling outage.

Other regulatory issues which are not yet technically resolved include:

(1) Transamerica-Delaval (TDI) diesel generators - determination of actions required to ensure long-term operability,

(2) Control Room Habitability - further documentation of analyses and compensatory measures to determine if a redundant control room HVAC system is needed, and

(3) Supplement 1 to NUREG-0737 (Generic Letter 82-33) -DCRDR, SPDS, Reg. Guide 1.97.

On TDI Diesels, the staff's Safety Evaluation dated November 19, 1984 has approved the necessary operability and reliability of the engines until the November 30, 1985 refueling outage, during which additional engine inspection will be performed. The staff will address the long-term operability of these engines prior to restart from the refueling outage.

On Control Room Habitability, the staff has requested further information which the licensee has agreed to provide by September 1, 1985. Until technical resolution of this issue is reached, implementation schedules for any upgrades cannot be determined.

Resolution of Generic Letter 82-33 on Emergency Response Capability items requires a licensee submittal. The DCRDR Program Plan and Reg. Guide 1.97 response are scheduled to be submitted in December 1985. The SPDS criteria are to be submitted in October 1986, after the DCRDR review has begun.

# PALISADES

The following long-term regulatory activities remain open at the Palisades Plant.

## Main Steam Line Break with Single Failure of Main Steam Isolation Valve

In 1982, during the SEP review of Palisades, the staff concluded that to ensure decay heat removal capability following a large steam line break upstream of the main steam isolation valve for that steam line, the effects of the single failure of the main steam isolation valve in the other main steam line must be precluded. These adverse effects, the blowdown of both steam generators, could result from the type of isolation valve employed. The valve is installed as a reverse-flow check valve that is held open by its operator unless an isolation signal is received at which point the operator releases the check valve and the steam flow passing through in the reverse direction closes the valve. However, for a steam line break upstream of such an isolation valve, steam flow in the forward direction through the valve would hold the valve open and reliance on the other main steam isolation valve in the intact steam line is necessary to prevent blowdown of both steam generators. The concern about this condition was heightened by three failures of a main steam isolation valve to close following shutdown and cooldown since the plant was licensed in 1970, the last failure being in 1973. Corrective actions were taken following each failure. In response to this concern, the licensee proposed to make modifications to preclude such single failure potential by the end of the 1984 refueling outage.

In August 1983, the licensee requested that the modifications be deferred until the 1986 refueling outage so that alternative corrective actions might be evaluated further. The extension was approved and the licensee recently submitted a probabilistic risk analysis that concludes that modifications to preclude this single-failure are not necessary. Additionally, based on this analysis, the licensee has withdrawn its commitment to make modifications to preclude single failure of main feedwater isolation valves allowing continued feedwater addition to a steam generator that has suffered a main steam line break inside containment. This commitment had been made in response to IE Bulletin 80-04, Main Steam Line Break with Continued Feedwater Addition. Due to resource limitations, the staff had not planned to start its review of the licensee's submittal until November 1985. The staff is reexamining priorities to expedite this review.

The licensee has taken measures to mitigate the effects of the failure of a main steam isolation valve during this postulated event. One of the major concerns was dry-out of the steam generators because one of the two auxiliary feedwater pumps is steam turbine driven and, with the loss of steam pressure from blowing down both steam generators, the steam driven pump would be inoperable, leaving only one pump. At the last refueling outage, another auxiliary feedwater pump was added which is motor driven and doubles the capacity available on loss of the steam driven pump, thereby reducing the potential for steam generator dry-out. In addition, procedures are being upgraded for using the condensate pumps and system as a backup to the auxiliary feedwater if offsite power is available. Wide range steam generator level indication channels have been added so that the water level can be

monitored if a dry-out condition is approached. New auxiliary feedwater lines have been installed along with an improved sparger that minimizes the probability of water hammer and removes previous limitations on auxiliary feedwater flow. A redundant condensate storage tank level channel was added to ensure the operator's ability to determine adequate source of make-up water. Inservice inspection of the main steam piping conducted during the refueling outages in 1979 and 1983 showed no evidence of significant deterioration in the critical welds sampled since the plant began commercial operation in 1971. These inspections have confirmed the low probability of the pipe break. The causes of MSIV failures experienced in the past have been identified and corrected, and MSIV operability is verified during each refueling outage. Based on these considerations, the staff concludes that the plant can be operated safely in the interim while the licensee's analysis is being reviewed. By letter dated June 21, 1985, the licensee stated that if the staff does not agree with its conclusion and replacement of the main steam isolation valves was deemed necessary, it would have to be scheduled for the next refueling outage which would occur approximately two years after completion of the NRC review.

The following longstanding multiplant action items were identified by Project Managers as having taken a longer time to resolve than desired.

A. Containment purge and vent was identified by eight project managers.

There are several different issues involved with this multiplant item. Some of the plants do not want to limit the amount of time the purge valves are open, others do not want to have the valves automatically isolate on a high radiation signal, and one utility has not shown that the valves remain operable following a design basis LOCA. The BWR Owners Group has stated that the staff's position on isolation of lines less than 3 inches in diameter is a backfit. The staff has denied that this is a backfit and a meeting was held in an effort to resolve the issue. The staff is reevaluating its position as a result of this meeting.

B. Fire protection was identified by eleven project managers. In most cases, the review of originally submitted programs and exemption requests is complete. However, additional exemption requests continued during the last two years and completion of the staff review of these requests is scheduled through the end of 1986. Recently, a trial program was initiated to have the fire protection reviews for two plants performed by a contractor. If successful, the completion of the reviews will be earlier than currently scheduled.