

Maintenance Tasks" on the hydrogen system and had not found any rust or corrosion on any of the valves or piping in the hydrogen system. An interview with a cognizant construction QC inspector found that the exposed piping surface conditions were documented on BNP-QCP-6.10, revision 8, test number 6A for the hydrogen system and acceptance of the surface conditions were verified with no rust or corrosion identified. A walkdown and inspection of the hydrogen system was conducted by the evaluator and an Assistant Unit Operator. No rust or corrosion problems were found.

Conclusion

This issue was not verified as factual.

Generic Applicability

This issue was evaluated at the site of concern (BLN) and found to be not valid. No other site evaluations are necessary.

3.3 Element 308.03 - Adequacy of Corrective Maintenance Programs and Activities

Issue 308.03-01 - Non-CSSC Valve Installed in CSSC System (BFN)

Issue BFNIESC-86-01 that the CI believes a non-safety related valve was installed in a safety related system is not valid. The system in question was the fire protection system. The valve in question was a fire hydrant that protects the high voltage switch yard. A review of the CSSC list that identifies safety related equipment did not have hydrant 0-26-505 listed. Furthermore, the switchyard is not safety related and does not require a safety related system for fire protection.

Conclusion

This issue was not verified as factual.

Generic Applicability

This issue was evaluated at the site of concern (BFN) and found to be not valid. No other site evaluations are necessary.

Issue 308.03-2 - Butterfly Valves Leak and Spare Parts Not Available (BLN)

Concern BNPQCP10.35-17 that the butterfly valve failures in the Emergency Raw Cooling Water (ERCW) system will cause extensive plant shutdowns was validated. This problem had been previously identified

to the NRC during the construction phase after having 45 documented seat failures out of approximately 400 BIF butterfly valves at BLN. The failures have been diagnosed by BIF as deterioration of elastomer seats during storage and damage by foreign objects during system flushing. These failures should not occur during normal operations. All failures have been repaired and tested satisfactorily.

As a result of the longterm lay up condition that BLN is currently in, many of the valves will not be retained in the ideal storage conditions required by BIF. BLN's solution is to identify and test all Local Leak Rate Test (LLRT) valves during preoperational and in-service test programs and will replace the valve seats as necessary. All other BIF valves will be repaired in accordance with normal maintenance programs.

This problem has been reported to the NRC on several occasions and corrective action has been taken. This concern impacts plant safety and has been addressed to the NRC under 10 CFR part 21.

Problems identified with this evaluation resulted in the issuance of CATD 30803-BLN-01 and 30803-BLN-02.

Conclusion

This issue is factual and corrective action is being taken as a result of the evaluation.

Generic Applicability

The BLN evaluation of this concern identified the issue to have been addressed under 10 CFR 21 reports previously submitted to the NRC. No other site evaluations are necessary.

Issue 308.03-3 - Inadequate Door Maintenance

This issue was evaluated at SQN, BFN, and WBN as a result of the concern DHT-85-003 being raised on inadequate maintenance of fire doors, security doors, and ABSCE doors at SQN. Element Report 306.01 also addresses fire door problems.

SQN

This issue has been addressed in Licensee Event Report (LER-SQRO-50-327/84073) identifying several fire doors as being either nonfunctional or not meeting code specifications. This issue was validated. A review of LERs from early 1984 through July 1986

showed a total of 19 cases where door failure or door inoperability directly or indirectly resulted in a reportable occurrence. However, as of March 18, 1986, SQN has had no new occurrences since a dedicated door crew now performs all door maintenance. This concern was substantiated and impacts plant safety. However, the action being taken is effectively resolving the concern with the exceptions noted:

- (1) The question pertaining to safety related designation of work activities on doors needs to be addressed.
- (2) Open Maintenance Action Tracking System (MATS) items 1294, 1295, and 1298 should be completed and closed out.
- (3) Training for the dedicated door crew is a one time only class. Periodic retraining and training of new personnel should be evaluated.

These actions are being tracked via CATD 30803-SQN-01.

BFN

Door maintenance is a significant problem at BFN; this issue was validated. Over 400 significant mechanical and electrical repairs have been performed on doors in 1986 alone. Several doors have been repaired several times and are considered chronic door problems due to their continual breakdown. A determination could not be made if initial repairs were unsatisfactory or that the design was deficient. However all final repairs were satisfactory. A review of LERs from 1984 to present, identified 15 doors with various problems including structural integrity being reduced by differential pressure across doors creating a high stress factor on both sides. However, only three of these doors were chronic problem doors identified earlier. The apparent cause is that maintenance is fixing the damage but not solving the problem. Chronic door maintenance problems are not being programmatically addressed. Appropriate modifications are not being identified to prevent recurrence of the problems.

The door maintenance problem is considered safety related due to the doors design requirements. However, the doors are being adequately repaired to perform their safety functions and therefore does not have a safety impact on plant startup. This activity will be tracked by CATD 30803-BFN-01.

WBN

The problems identified at SQN and BFN have not shown up at this stage of plant construction and startup. A review of 100 door MRs from 1985 through 1986 did not reveal any trend that would indicate that there was inadequate door maintenance. Interviews with cognizant maintenance personnel could find no significant problems with door maintenance. Therefore, the concern is not valid at WBN. However, due to the significant problems that have occurred at TVA's only two operating plants, these problems may occur during plant operations at WBN. Currently, WBN does not trend equipment failures that are not part of the Nuclear Plant Reliability Data System (NPRDS) data base listing. As door problems occur, similar situations to BFN and SQN could go undetected at WBN. CATD 30803-WBN-01 was initiated.

Conclusion

At SQN, this issue was found to be factual but corrective action was initiated prior to the evaluation.

At BFN, the issue was found to be factual and corrective action is being taken as a result of the evaluation.

At WBN, the issue itself did not identify a problem but, as a result of the evaluation, a different problem was identified that requires corrective action.

Generic Applicability

This issue was not evaluated at BLN due to the stage of construction and lack of current maintenance activities.

Issue 308.03-4 - Need to Check Torque Wrench Calibration

Concern GSB-85-001 raised this issue at SQN. Since torque wrench control and calibration is generic to all plants, this issue was evaluated as such. The scope of this evaluation only included maintenance and not construction.

The requirements for using calibrated measuring and test equipment (M&TE) are included in Regulatory Guide 1.33, February 1978 and implemented by TVA in the Nuclear Quality Assurance Manual, NQAM, Part III. This procedure establishes controls to ensure the M&TE used on safety related components are in conformance with prescribed technical requirements.

SQN

The SQN instruction AI-31, that controls this process does not require a recalibration or calibration check to be performed immediately after the use of the torque wrench. An NRC audit in January of 1985 indicated that the present tracking program was cumbersome, evaluations are sometimes difficult and corrective action is hard to implement due to the long periods of time between calibrations. The plant responded to these findings on February 6, 1985 (S53 850201 910) by indicating that these periods could be reduced if the torque wrenches were calibration checked after each usage. If the check shows that the tool is out of tolerance, the engineer could take immediate corrective action. This recommendation was implemented through a revision to AI-31, revision 5, referring to Section Instruction Letter (SIL) SS/MU-3 to ensure the tool is check after each usage. This concern was valid at the time it was written but has since been corrected. No further action is required.

BFN

The Standard Practice BF-17.5 complies to the NQAM requirements for BFN. As with SQN, this procedure does not require a calibration check of torque wrenches be performed after each usage. However, as a good practice, all torque wrenches are rechecked after each job and is documented in the tool room log (BF 17.5, Attachment 7). This log which is kept in the tool room, includes the usage date and the associated MR. Any torque wrench found out-of-calibration can be immediately identified and corrective action can be taken. This concern was not substantiated at BFN and no further action is required.

WBN

Subsequent to the corrective actions implemented at SQN, similar actions were initiated at WBN as verified through review of WBN procedure AI-5.9 and Material Section Letter, M-5. This letter contains the same post use calibration requirement as SQN in that each torque wrench be calibration checked following each use to assure its accuracy at the value used. This concern is therefore not valid. The calibration check is documented and maintained until the full range calibration is performed and found acceptable.

BLN

The calibration of torque wrenches at BLN also meet the requirements of NQAM, Part III per Standard Practice BLE-2. Each torque wrenches history is maintained on MMSIL-2 form which includes its unique

identifier, last calibration date, issue date, return date and users initial. Unlike SQN, BFN and WBN the torque wrenches are not calibration checked after each job. Calibration intervals vary between 26 weeks and one year allowing a torque wrench to be used many times between calibrations. In a particular case one wrench was used 10 times between calibrations. If the wrench is found out-of-calibration, all 10 jobs are suspect. This concern may be valid when the plant is operating. However, a wrench now found out-of-calibration is only an inconvenience and some extra work. Presently, this concern is not valid and does not have a safety impact. Resolution has been requested via 30803-BLN-03.

Conclusion

At SQN, this concern was factual but corrective action was initiated before the evaluation.

At BFN, WBN and BLN, the issue could not be verified as factual.

Issue 308.03-5 - MRs Being Signed Off Complete Without Work Being Performed (WBN)

The issue from concern IN-85-025-005 was that work was either incorrectly performed or incomplete but was being written off as complete to give the appearance of increased production. This issue was not validated. The Correction Action Report (CAR) and Discrepancy Report (DR) logs were reviewed for 1986. There were 66 reports that were related to maintenance personnel not following procedures. However, only two were related to adequacy or completeness of maintenance work. Both WB-CAR-85-057 and WB-DR-86-018R have corrective actions completed and accepted by QA.

The same issue was addressed in concern IN-86-15-002 in element 308.04. During this evaluation, a random sample of 40 closed out work packages from various maintenance sections were reviewed for satisfactory completion of work. Work was verified complete in all 40 of the packages by reviewing signoffs by the workers, foreman, operations and quality control. Another ten canceled work packages were reviewed to identify any work signed off as complete that was not performed. All of the MRs identified, were cancelled due to various reasons identified in MRs. None of the cancelled MRs had work performed or were signed off as complete.

In addition, 175 completed work packages were reviewed for configuration changes for Subcategory Report 30700. The conclusion from this evaluation was that the MRs adequately documented that work was performed to the requirements of the work packages. Indications of this were QC signoffs in various steps in the work instructions, verifications of electrical leads lifted and returned to normal, and material forms were referenced indicating that new material was installed during the performance of work. These indications collectively indicate that work was performed and completed. The work packages were closed out, the equipment was tested (if required) and the systems were returned to operable status.

Conclusion

This issue was not verified as factual.

Generic Applicability

The evaluation at WBN concluded that this item was not factual. No other site evaluations are necessary.

Issue 308.03-6 - Need to Secure Tubing in Accordance with Drawings (WBN)

Concern IN-85-108-X02 specifically addressed a hanger that was not installed in accordance with the as-constructed detail drawing. The concern was validated. The MR identified in the concern (A-483663) was located in the records management system and was found to resolve this discrepancy. It was completed and verified by Quality Control on July 3, 1985. This concern is considered to be an isolated incident and was resolved via normal channels.

Conclusion

This issue was factual but corrective action was initiated before the evaluation.

Generic Applicability

The evaluation determined this situation to be specific to WBN with no generic implications. No other site evaluations are necessary.

Issue 308.03-7 - Maintenance Request (MR) Safety Review Inadequate (WBN)

Two concerns, IN-85-129-X05 and IN-85-142-X10), were raised at WBN with regards to Maintenance Request (MR) being signed off without performing the safety review; both are valid.

The falsification issues are being evaluated by the Office of the Inspector General and not by this report. The term "safety analysis" as stated in the concern refers to job safety planning, personnel safety and work hazards.

The finding was observed by comparing the incident rate for recordable and lost time accidents between similar maintenance sections at SQN and WBN. A review of these results found an unacceptable recordable and lost time accident rate at WBN, specifically in Mechanical Maintenance. Industrial Safety Subcategory Report 90100 addresses this issue and Corrective Action Tracking Documents (CATD) were written to require corrective action. Therefore, no further action is required. These concerns were not safety-related.

The lost time accident rate was reviewed at SQN for the sole intent to compare the results to that at WBN. However, by performing this comparison, it is evident that SQN performs an adequate safety review due to their satisfactory accident record. No further action at SQN is required.

Conclusion

Both concerns are factual but corrective action was initiated before the evaluation was commenced.

Generic Applicability

For IN-85-142-X10, the WBN evaluation found the safety analysis referred to in the concern to be an industrial safety issue. A comparison of WBN industrial safety statistics to other sites indicated an area of concern. The issue of WBN industrial safety is addressed in the Industrial Safety CEG report 90100. As no nuclear safety-related issues were identified, no other site evaluations are necessary.

For IN-85-129-X05, the evaluation will be conducted by the Office of the Inspector General.

Issue 308.03-8 - MRs on Security Equipment to be Completed Promptly (WBN)

Issue IN-86-056-001 questions the maintenance work priority placed on security equipment to ensure plant security is not jeopardized. Maintenance procedure AI-9.2 addresses priorities of MRs and the methods used to determine the priorities. A cognizant public safety officer stated that the performance of MRs was not a problem at gate 10 and that Maintenance personnel worked the MRs promptly.

The officer stated that the problems with gate 10 identified in the concern were not with the magnetic switches but the adjustment and design of the gate which have been corrected. This issue is addressed in more detail in Element Report 312.11.

Conclusion

This issue was not verified as factual.

Issue 308.03-9 - Sprinkler System Drainage Inadequate (WBN)

The issue addressed is a specific concern, IN-86-96-001, requiring a 55 gallon drum to collect drainage of an auxiliary building pre-action sprinkler system. This concern was found to be valid. The fire protection engineer stated that during a spurious actuation of this system, water would drain through the alarm pressure sensor into the collector piping which would drain to the floor. The function of the 55 gallon drum is to collect the system drainage during the spurious actuation of the system. The system is of a pre-action design, in that when it activates the system header only charges and does not spray until a rise in temperature melts the links in the spray nozzles. The engineer stated that a Design Change Request (DCR) is being processed to address this problem.

This concern is valid due to the plant not being designed to accommodate the system drainage. This problem has been identified verbally to Division of Nuclear Engineering (DNE) and WBN is planning to initiate a DCR for evaluation/resolution of the problem. CATD 30803-WBN-02 was initiated to ensure completion of the issue.

Conclusion

This issue was factual but corrective action was initiated before the evaluation commenced.

Issue 308.03-10 - Maintenance Request Initiator Requires Work Update (WBN)

Concern IN-86-315-005 is that an MR initiator is not informed on the results of the work performed. The concern was found to be not valid. There are no written requirements that an MR initiator be notified upon work completion. If an individual has an interest in a specific MR, he can ask the maintenance planner for status. There are means for interested parties to receive status of MRs from initiating to completion. No further action is required.

Conclusion

This issue was not verified as factual.

Issue 308.03-11 Work Package Incomplete (WBN)

In concern IN-86-316-002, the CI did not believe all information required to perform work was included in the work package; this issue could not be validated. The foreman/general foreman is responsible for reviewing a work package for adequacy and completeness before its start in accordance with AI-9.2. If the craft do not have adequate information to perform the work, he is to inform his supervisor. The engineer can determine that information provided was adequate. Vendor manual information may not be applicable and should not be used unless it was previously approved for this work.

Conclusion

This issue was not verified as factual.

Generic Applicability

This issue was evaluated at the site of concern (WBN) and found to be not valid. No other site evaluations are necessary.

Issue 308.03-12 Supervisor Review of Work Packages Required With Craft (SQN)

The issue identified in concern SQP-86-014-002 is the alleged requirement for craft supervision to review the work package with the craft before commencement of work. This issue could not be validated. Standard Practices SQM-1 and SQM-2 require supervision to review work packages for proper planning and to ensure the instructions are adequate. There are no requirements for supervision to review the work package with the craft. The craft is responsible for understanding the work package and to identify and problems with the instruction to his supervision. For safety related equipment, the craft is obligated to complete an instruction review sheet before work begins for any attached instructions. No requirement exists for supervision to review work package with the craft.

Conclusion

This issue was not verified as factual.

Generic Applicability

This concern was evaluated at the site of concern (SQN) and found to be not valid. No other site evaluations are necessary.

Issue 308.03-13 Questionable Hardware Repair Process (SQN)

Concern XX-85-071-003, which questions the hardware repair process, cannot be evaluated because of lack of information. The NRC expurgated file for this issue was reviewed and contained no additional information. The SQN Site Director was notified by memorandum.

Conclusion

This issue could not be evaluated or verified as factual.

Generic Applicability

Evaluation was attempted at the site of concern (SQN). There was not enough data to perform an evaluation; no other site evaluations are necessary.

Issue 308.03-14 Large Spill Was Misrepresented to NRC as Small Leak (SQN)

The NRC identified a concern, XX-85-096-N07 from the review of the QTC file that a large spill was reported to the NRC as a small instrumentation leak. This issue could not be validated. Licensing Event Report (LER SQRO-50-327/84030) reported that a thimble tube seal failed resulting in a reactor coolant pressure boundary leak of 25-35 gallons per minute while the plant was at 30 percent power. The leak was identified in gallons per minute (GPM) because the Technical Specification Limiting Condition of Operations (LCO) are measured in GPM. Since the plant had exceeded these limits, it was forced to shutdown. Reactor coolant leakage is a significant operating parameter and measurement in GPM is a much more meaningful measurement than total leakage. This measurement was reported accurately in this report. The total leakage of 16,000 gallons was identified in the body of the LER. This event was reported accurately to the NRC and identified the leak as significant.

Conclusion

This issue was not verified as factual.

Generic Applicability

The issue was evaluated at the site of concern (SQN) and found to be not valid. No other site evaluations are necessary.

Issue 308.03-15 Thimble Guide Incident Recurrence

SQN

The issue identified in concern XX-85-096-005 is that this problem could occur again if the thimble guide tubes are repaired during plant operations. The thimble guide tubes are not designed to have maintenance performed on them at plant operating pressure. As a result of this incident, maintenance instructions were revised to prohibit maintenance or cleaning of the thimble guide tubes from being performed at any time when the reactor pressure is above atmospheric pressure and the coolant temperature is above 150°F. Procedure revisions also include implementation of a special tool control program. This concern was substantiated and identifies a problem but corrective action was taken as a result of the incident and has been completed.

WBN

The incident identified in XX-85-096-005 could also occur at WBN because of similarity of design at both plants. As a result of the SQN incident, WBN has made provisions to administratively control thimble guide tube activities and thereby effectively prevent occurrence of a guide tube ejection incident. The same requirements established at SQN have been implemented at WBN. This concern was thereby considered valid but action has already been taken as a result of the SQN incident. No further action is required.

Conclusion

This issue was factual but corrective action was initiated before the evaluation took place.

Generic Applicability

This concern was evaluated at SQN and WBN due to the similarity of design. Since BLN and BFN are different NSSS designs, no evaluations are necessary at those sites.

Issue 308.03-16 Repairs not to ASME Requirements

Concern 2850162005 addressed three specific areas relating to American Society of Mechanical Engineers (ASME) code requirements. The furmanite (sophisticated glue) issue was evaluated under this element at all plants whereas the patches and overlays issue was evaluated by the Welding Group of Employee Concerns. Although there is no portion of the Code which addresses temporary packing or gasket leak repair, holes that are drilled into ASME, Section III components should have an engineering evaluation performed to address the effects of stress increases caused by the removal of

metal and the shift in gasket loading caused by furmanite injection. Furmanite is a product that allows leak repairs to valves, piping, heat exchangers be made with systems at normal operating temperatures and pressures. This repair is performed by personnel specifically trained for this skill.

SQN

A specific case was identified at SQN where the unit-1 Turbine Auxiliary Feedwater Pump check valve had small holes drilled into the bonnet flange for furmanite injection without a safety evaluation being performed. Also, an evaluation was not performed on the compatibility of the furmanite product with its component's material for identification of long-term damaging effects. A new general specification G-85 has been drafted to provide guidance in the use of temporary sealants. This concern is therefore substantiated although there is not specific ASME code requirements which address the topic of temporary leak repair. This problem was identified previous to this evaluation, corrective action is in process and will be monitored via CATD 30803-SQN-02.

BFN

A review of all purchase orders and job requisitions from 1984 to present did not reveal any instance where Furmanite had been utilized on ASME Section III piping systems. Maintenance will not allow its usage on these systems to avoid any safety related problems in dealing with pressure boundary leak prevention. This concern was therefore not substantiated at BFN.

However, a problem does exist on the usage of furmanite on non-code equipment. A documentation review revealed that the use of furmanite is not controlled through the MR system. No MRs were identified showing the use of furmanite, yet the product was used at BFN on 19 separate occasions as identified on furmanite purchase orders. Also, no system is available to track the usage of furmanite on plant equipment so a permanent repair can be made at the first available outage. These problems were identified to BFN via CATD's 30803-BFN-02, 03 and 04.

WBN

An interview conducted with a cognizant maintenance engineer found that furmanite has not been used at WBN. Furmanite will be used only after the plant is in operation and General Construction Specification G-85 is written and approved. Also, implementing procedures will be written at that time and will be PORC reviewed and approved. Therefore, this concern was not substantiated at WBN.

BLN

Concern 2850162005 is not valid at BLN. Furmanite is not used at BLN and will not be considered until startup. The welding section of ECTG will evaluate the welding overlay and patches for ASME code requirements.

Conclusion

At SQN, the issue was factual and corrective action was initiated before the evaluation was started.

At BFN, the issue itself was not a problem but in the course of the evaluation, other problems were identified that require corrective actions.

At WBN and BLN, this issue was not verified as factual.

3.4 Element 308.04 - Program Deficiencies/Procedural Violations

Issue 308.04-1 Foreman Using Verbal Hold Orders (WBN)

The issue that foreman may cause unsafe work conditions because he does not like to use hold orders to perform work was evaluated from concern EX-85-048-001.

The concern that TVA foreman have work performed without hold orders is acceptable if the shift engineer has jointly agreed with the foreman that a clearance is not necessary. This is allowed per clearance procedure AI-2.12 for minor jobs (i.e. packing valves, troubleshooting). However, if the craft, foreman or shift engineer want the clearance, a hold order shall be written. Review of the CAR/DR Log, found no violations where the foreman required craft to work without hold orders. Industrial Safety Department in both construction and operations stated that no injuries had occurred because of workers working without proper clearance. Therefore, foreman using verbal hold orders and creating dangerous work conditions could not be substantiated. No further action is required.

Conclusion

This issue was not verified as factual.

Generic Applicability

This concern was evaluated at the site of concern (WBN) and found to be not valid. No other site evaluations are necessary.

Issue 308.04-2 Potential Safety Hazard with Temporary Hose Drainage (SQN)

Concern I-86-233-SQN raised the issue about a rubber hose being temporarily used to drain the condensate demineralizer waste evaporator; this issue was not validated. The CI stated that extensive modifications near the hose may cause a rupture and result in a personnel safety hazard. A reinforced bull hose has been installed to drain the evaporator off grade distillate and bottoms to the plant Floor Drain Collector Tank (FDCT). Radiation monitors are installed in key locations that will warn personnel when high level effluent exists. During routine operations, the hose is utilized to drain very low level radiation (less than background) off grade distillate that eventually goes to the river.

Therefore, during normal operation there is no danger of personnel contamination. Draining contaminated fluid is only necessary during and subsequent to an emergency evaporator shutdown necessitated by pump seal failure or other similar problem.

The CDWE operation procedure, System Operating Instruction SOI-77.1B3, "Waste Disposal System (Liquid)" was reviewed. It provides for personnel protection during evolutions of high radiation level drainage for pump seal failure, which requires dumping bottoms, and discharging the slurry tank to the FDCT. In these cases the procedure requires notification of health physics so that personnel can be cleared from the area. The addition of this hose provided for CDWE drainage in lieu of having all evaporator drainage routed to various floor drains which have occasionally backed up and caused contaminated water to flood the floors. Design work is in progress to remove the hose and install permanent pipe.

There have not been extensive modifications in this area. When welding and cutting has been performed near the hose the protection of burnable material is adequately provided in plant procedure AI-15. An individual stated that he has seen the bull hose covered during welding.

Conclusion

This issue was not verified as factual.

Generic Applicability

The focus of the 30804 evaluation was on adequate welding protection procedure requirements. This resulted in a not valid finding class. Evaluations at other sites are not necessary.

Issue 308.04-3 Inadequate Controls of Instrument Adjustment (WBN)

This issue was identified and evaluated originally under concern IN-85-142-006. Concern IN-85-142-X11 is an identical concern with the exception it did not identify a specific case as did the previous one. This issue is that instruments were adjusted to match control room instrumentation without being recalibrated. The specific case cited in the previous concern found this to be valid. The recommendations of this report required that Instrument Maintenance engineers and maintenance employees be "trained on the proper methods to apply when redundant indicators do not read within the acceptable tolerance and that adjusting the zero is not an acceptable method." Also the specific instrumentation in question was required to have proper documentation showing that corrections were made to that instrument.

Concern IN-85-142-006 was evaluated approximately seven months later by the ECTG under element report 30302. The findings substantiated the NSRS report (I-85-327-WBN) conclusions and agreed with the recommendations. This followup report also found the plant had responded satisfactorily to these recommendations. Further evaluations performed in 30302 element report could not find other instances where Instrument Maintenance engineering instructed technicians to adjust level indicators without documentation.

A review of the CAR and DR log from 1985 to present could find no other instances where Instrument Maintenance adjusted instruments without proper documentation. This concern has been substantiated but was corrected before this latest evaluation. This incident was an isolated case and could not be identified as a generic problem. No further action is required.

Conclusion

This issue was factual but corrective action was initiated before the evaluation being done.

Generic Applicability

The evaluation determined this concern to be an isolated incident at WBN. Additional information was also obtained during the evaluation of IN-85-142-006 in element 303.02. No other site evaluations are necessary.

Issue 308.04-4 Check Valves Removed From Welding Gas Headers (WBN)

Concern IN-85-338-001 addressed an issue dealing with misuse of a temporary system; it could not be validated. The gas welding header is a temporary system currently installed in unit-2. An inspection performed by the evaluator found the system to have only capped angle valves coming off the headers.

Issue 308.04-6 Nuclear Power Responsible for Repairs/Modifications
at Turnover (WBN)

Concern IN-85-553-001 recommends that it is more economical for Nuclear Power to be responsible for modifications or repairs to turned over systems. This concern was not validated. The work control procedure, ID-QAP-1.3 specifically states that transfer of responsibility for modifications does not pass to nuclear power until the unit is licensed. DNC maintains overall responsibility for preparing workplans, coordinating schedule with DNE and Nuclear Power and performing actual modification. Nuclear Power assumes operational and maintenance responsibilities for plant equipment that has been tentatively transferred as required by Interdivisional Quality Assurance Procedure (ID-QAP) 1.2. Nuclear Power has the option of requesting assistance from DNC up until the completion of the 300-hour period of rated load operation of the unit. Due to the reorganization that gives DNC the responsibility for modifications this recommendation is not possible.

Conclusion

This issue was not verified as factual.

Issue 308.04-7 Fire Door Blocked Open Without Breach Permit (WBN)

Concern IN-85-895-002 identified a specific case where a door was blocked open without a breach permit being issued. This concern was substantiated. The door in question was a fire door at the airlock separating the Service and Auxiliary Building. During the time that this door was being modified it failed to operate properly on several occasions and was left open. Physical Security Instruction-2, Fire Protection Plan, requires that a breaching permit be issued any time a fire barrier is nonfunctional. The maintenance personnel involved in performing this work failed to obtain the proper permits to open the fire door. When the door failed to function during an evening or night shift, Public Safety personnel opened the door to allow personnel access and did not obtain the necessary permits. A Discrepancy (DR) Report was issued because of the breaching violation. The resolution to the DR was to ensure maintenance personnel are aware of the breaching permit requirements and follow the correct procedure while performing maintenance on fire doors. Public Safety officers have been instructed to contact the shift engineer for a permit if fire doors fail to operate and are opened. This particular instance is the only documented violation of the doors breaching permit requirement recorded between January 1, 1986, and February 4, 1987, it can be concluded that it is an isolated case and not a degradation of the Fire Door Program. No further action is required.

Conclusion

This issue was factual but corrective action was initiated before the evaluation was performed.

Generic Applicability

The evaluation of this concern determined the issue to be specific to WBN. No other site evaluation is necessary.

Issue 308.04-8 Material Not Being Sufficiently Supplied to Craft (WBN)

This issue was addressed by two concerns: IN-85-905-001 and IN-86-097-001, one addressed an inadequate supply of common material being maintained in stores and the other indicated the lack of common material on-hand causing work delays.

Material stocking levels and reorder points for spare parts are established by user organizations based upon their identified needs. Stocking levels for common usage items are established by the Power Stores Unit (PSU). At the time a stocked item inventory reaches the reorder point, PSU personnel review the actual usage history of the item since the last time the item was ordered and may adjust the reorder quantity and reorder point up or down dependent upon actual usage.

The Power Stores material issue history for October and November 1986 was reviewed and evaluated using the Monthly Nuclear Inventory Summary Report issued by the Materials Branch in Chattanooga. The actual total material issues made was 2,586 or an average 63 material issues each work day.

A review of the "Stockout Conditions Reported by 6200 Watts Bar Nuclear" report for the period October 1, 1985 through September 30, 1986, disclosed a total of 928 stockouts over a twelve month period. Since this total includes several items that were stocked-out more than one time, the actual items stocked-out is 221. This represents approximately 4 stockouts each work day or 6 percent of the total requisitions submitted.

A 10 percent sample of stockout items was selected at random and tracked on a monthly basis for one year in an attempt to observe a trend of stockout items. This sample indicated an upward trend of stockout items over this period.

Of the 221 stockout items, in a one year period, 65 items were stocked-out four or more times. This appears to indicate a trend of a stocking problem. However, further analysis revealed that only 28 items were material which could be used for plant equipment repair.

The remaining 27 items were specific make/model replacement parts or janitorial or facilities support materials not related to plant equipment.

Input provided by the Power Stores Unit Supervisor indicates more than 45,000 items are maintained in stock by Power Stores. This means that less than .06-percent of these items that could be used for plant equipment experienced four or more stockouts in the 12 month period.

The lack of adequate supply of material from Power Stores such as nuts, bolts, and sheet metals and other common items that may delay jobs could not be substantiated. It is both uneconomical and unrealistic to attempt to totally eliminate occasional stockout occurrences. Since Power Stores and Maintenance Planning already employ an ongoing process to optimize inventory stocking levels based upon actual usage history, additional corrective action is not warranted.

Conclusion

Concern IN-86-097-001 could not be verified as factual; IN-85-905-001 was factual but did not constitute a problem requiring corrective action.

Issue 308.04-9 Configuration Control of Vendor Manuals

Concern IN-86-073-002 questions the control of vendor drawings in shop vendor manuals to ensure they reflect as-constructed conditions. This concern was evaluated at all sites. The Nuclear Quality Assurance Manual (NQAM) part III, section 1 and Quality Notice ID-QAP-6.2 adequately address the requirements for and use of vendor manuals. Plant procedures for the implementation of these requirements have been developed at SQN and BFN; an evaluation of the requirements is being conducted at WBN. The implementation of these requirements has resulted in the establishment of an ONP Manager, Vendor Manual Control, identification of interfaces with DNE for technical reviews and processes to control the use of vendor manuals and drawings. | R2

WBN

Vendor manuals are controlled according to the requirements of AI-4.4. This procedure controls all revisions to the manuals including updating drawings or schematics. If a manual is being controlled by a section other than Document Control (DCS), that group is sent the change to update the manual. An audit is performed by DCS once a year to ensure all manuals have not been lost and have proper revisions.

Drawings in these vendor manuals however, are considered 'information only' unless otherwise designated. If a drawing is deemed necessary to as-configure, it is to be placed under TVA's drawing control program. Drawings in the vendor manuals should not be used by the craft for performing work in the field unless appropriate approvals are obtained and the drawings are in TVA's drawing control program Drawing Management System (DMS).

During this evaluation it was observed that vendor drawings in the manuals are being used for trouble shooting and replacement of parts. In many instances, these drawings are not included in the DMS. An example of this is when Instrument Maintenance uses the vendor drawings to trouble shoot and repair a CSSC controller. When the problem was isolated, a part replacement was made using the manual as a source document. The schematics used have not been verified by TVA to reflect the actual configuration for that piece of equipment. If a part was replaced with a alternate part from a previous repair, this change is not reflected in the vendor manual schematics master file copy. It could only be found in the Instrument Maintenance copy.

In the fall of 1986, the NRC requested additional information from TVA concerning Generic Letter 83-28. This letter indicated that TVA may have problems establishing a vendor interface that ensures all applicable information is received to maintain vendor information up-to-date. Indications of these NRC concerns were observed from specific examples shown to this evaluator during this evaluation. These examples indicate that the vendor and TVA do not have an acceptable working interface to exchange information to ensure that TVA has the most current information.

The concern that vendor manuals in the shop do not contain the latest drawings and schematics is valid. The Document Control System for controlling vendor manuals at WBN appear to be adequate for incorporating all revision that are sent to them. However, there are no assurances that the vendor manuals reflect the configuration of the plant equipment even if the manual is certified. The manual may have reflected the as-constructed condition but updates from vendors are not always received and reviewed by the plant staff. Corrective action was requested via CATD 30804-WBN-01; corrective action will be accomplished prior to fuel load.

The plant staff, in many instances contacts vendor directly to obtain the current revision of the vendor manual. It was also observed that the schematics in vendor manuals are being used not only for trouble shooting, but for identifying replacement components from non-certified manuals. These schematics, which were used from

manuals that are not certified, could not be found in drawing control of the Drawing Management System. CATD 30804-WBN-02 was initiated to resolve this problem; corrective action will be accomplished prior to fuel load. |R2

Comprehensive corrective actions to be taken to resolve these items are detailed in Section 6.0, "Corrective Action", of this report. |R2

SQN

In 1985, Corrective Action Report, CAR 85-03-005 identified that Instrumentation was working from vendor drawings not validated in the field. At this time vendor drawings were to be used for information only and no program existed for verifying or "As-Constructing" (AC) these drawings. Drawing control procedure, Administrative Instruction AI-25 was modified at the beginning of 1986 to implement a new program for vendor drawings configuration control. The parent document, TVA Nuclear Quality Assurance Manual (NQAM, part III, section 1.1) was also revised by issuance of a quality notice (appendix A, dated November 29, 1985). This quality notice provided for use of best copy available vendor drawings. Specifically, AI-25 requires the vendor drawing user to verify if a "Configuration Control Drawing" existed before doing work in the field by requiring completion of the appropriate forms and consequently making a determination of the "Best Copy Available" (BCA) vendor drawing. A BCA vendor drawing is an unverified drawing or a drawing which has not been completely verified ("Partially Verified") against the existing plant configuration. It is the drawing that is determined to be the best available information onsite for a particular job application. BCA drawings are stamped "Best Copy Available" and also marked "Use with Caution." "Best Copy" authorization is good for 30 days from the date stamped. During the use of this drawing, the equipment/component will be visually inspected to compare the drawing to actual configuration if the portion being used has not been previously verified. The portion of a drawing which has been verified will be circled; eventually the entire drawing will be "As-Constructed." Consequently, this program provides for field verification of an unconfigured vendor drawing by field inspection and subsequent cognizant engineer review and approval. In accordance with current AI-25 (section 5.2.10) requirements, only drawings listed as "Controlled Copy," "Verified Copy," "Partially Verified," and "Workplan Copy" shall be allowed for use in the plant main control room. Other drawings are allowed in the plant but shall not be utilized in activities affecting quality. The new vendor drawing program is being utilized by plant personnel; four vendor drawing configuration packages (AI-25, attachment B's) were located in the drawing control unit. Since the above information identifies the methodology to assure accurate information is being used in the field for safety-related activities, no additional corrective action is necessary. |R2

The concern that uncontrolled vendor drawings have been used in the field is valid. This concern is safety related. However, this problem has been adequately documented, is being corrected, and a new program is in effect to "as-construct" or partially verify vendor drawings.

BFN

A review of CARs and DRs issued since January 1984 revealed seven (7) related nonconformances issued for use of invalid drawings in the field. None of the findings involved uncontrolled vendor manuals. A review was also conducted of the TVA NQAM, Site Director Standard Practices (SDSP) and BFN Standard Practices (BF). Drawing control procedure, BF-2.5, was modified in March 1986 to implement a new program placing vendor drawings in the configuration control system. The new program is identical to the SQN program as stated above. The concern that uncontrolled vendor drawings have been used in the field is not validated at BFN. The procedures and systems currently in place, in addition to the ongoing configuration control process, are sufficient to preclude this problem.

BLN

Some vendor drawings have in the past been incorrectly marked "AC" (As-Constructed) by DNC and were probably used in the field under that status. This procedure has since been changed deleting this requirement. NUC PR Standard Practice BLA-5.9 was revised May 28, 1986, to implement NQAM-III, 1.1, Quality Notice dated November 29, 1985. BLA-5.9 requires that only vendor drawings which have been verified/partially verified (V/PV) be used and if the drawing is not identified as V or PV, it must be reviewed and evaluated before use. A Drawing Management System (DMS) is used to store, update, and retrieve drawing information related to vendor drawings. If a non-verified vendor drawing is required to perform work, the BCA must be used and controlled as described in the SQN evaluation. Attachment 1 of BLA-5.9 will be completed during this visual inspection. Consequently, this program provides for field verification of an unconfigured vendor drawing by field inspection and subsequent system engineer review and approval. After system engineer approval, the drawings and associated forms are returned to DCU and the DMS is updated to indicate the V/PV status of the drawing. All affected personnel have received training in the use of vendor drawings as outlined in BLA-5.9.

The concern that uncontrolled vendor drawings have been used in the field was validated. However, a new program is in effect which requires use of a verified/partially verified vendor drawing or that field evaluation for correct configuration be performed if the vendor drawing is not already verified/partially verified. This concern is safety related. No further action is required.

Conclusion

At WBN, the issue was valid and corrective action is being taken as a result of this evaluation.

At SQN, the issue was factual but corrective action was initiated prior to the conduct of the evaluation.

At BFN, this issue could not be verified as factual.

At BLN, the issue was factual but corrective action was initiated prior to the conduct of the evaluation.

Issue 308.04-10 Jackhammers Used During Ice Loading

Concern IN-86-110-001 was evaluated at both SQN and WBN because of both plants having ice condensers. The configuration of the ice which is affected by the use of a jackhammer is the concern being addressed.

WBN

NSRS Investigation Report I-85-455-WBN evaluated this concern on October 15-18, 1985 and established that the concern was factual but of no consequence. The procedure used for loading the ice condenser MI-61.1 did not specify the use of a compacter but it required each basket to be filled with 1450-1550 pounds of ice. Westinghouse has conducted tests (WCAP 295/and 7040) using various configurations using ice chips or ice cubes of various shapes, baskets with and without steam flow holes, and a large block of ice with flow holes. Test results indicate that the performance was not strongly affected by ice configuration. Maintenance personnel confirmed the fact that a DNE soil compacter was used to obtain maximum allowable weight of ice per basket. However, there is no procedure restrictions that prohibit the use of compactors. Westinghouse has tested several configurations and determined that the only criteria that must be satisfied is the weight requirement of ice per basket. The method used to meet this requirement is not specified by Westinghouse.

SQN

Ice condenser weighing, addition, and removal of ice is controlled by SQN maintenance procedure MI-5.3. At SQN, basket space for ice addition is made utilizing a thermal drill. This is a cone-shaped insulated heat element that melts the necessary cavity for ice addition. A jack hammer or concrete vibrator was used briefly for demonstration purposes about four years ago. The demonstration was for evaluation of acceptable ice addition techniques. However, this technique has never routinely utilized a jack hammer for ice addition.

Therefore, the concern generated at WBN cannot be substantiated at SQN. No further action is required.

Conclusion

At WBN, this concern was factual but did not constitute a problem requiring corrective action.

At SQN, this concern could not be verified as factual.

Generic Applicability

This concern was evaluated at SQN and WBN. No other TVA sites have ice condensers; no other site evaluations are necessary.

Issue 308.04-11 Engineering Accepts Work Not Completed

The issue identified in concern IN-86-315-002 was evaluated at all plants. The issue being addressed was that engineering will disposition Notice of Indications (NOI) and Maintenance Requests (MR) without fixing.

WBN

NOIs are used to report unacceptable indications of components within the scope of ASME Section XI and which have been scheduled for examination. Any other discrepancies should be reported via MR, DR, CAR, etc. Dispositions to accept the condition "as-is" shall include the basis for the disposition. In addition, for dispositions to accept the condition "as-is", an Unreviewed Safety Question Determination (USQD) shall be prepared by the appropriate organization in accordance with established procedures and a copy submitted along with the NOI.

Interviews with the NDE inspection section personnel and a review of the NDE Inspection Section NOI Log revealed that there have been only three NOIs dispositioned "accept as-is" since the baseline inspection program was initiated. All three were dispositioned within the requirements of TI-50A. It was noted that several NOIs had been voided but none fell within the parameters provided in TI-50A.

The concern regarding MRs that were dispositioned without fixing was evaluated under concern JLH-86-001 of this element. The only difference is that engineering was cited in this concern. Plant Engineering is the only engineering group that is directly involved in the MR process. They become involved when the work to be performed is more complex than routine work packages (i.e. welding, special work instructions, etc.). They are normally not in a position to disposition the work without fixing.

In the review of the random sample of MRs where work was not performed, no cases revealed that Plant Engineering had dispositioned work as acceptable without fixing. Therefore, the concern could not be substantiated.

SQN

The NSRS Investigation Report I-85-738-SQN, along with discussions with Inservice Inspection (ISI) personnel, revealed NOIs have been dispositioned without providing apparent documentation of the final NOI resolution. NOIs can legally be re-evaluated or rectified by acceptance criteria change or reinspection by an NDE supervisor or a higher level examiner. This was substantiated by the NSRS report which did not identify any improper NOI acceptance. The SQN implementing surveillance instructions are currently being changed to provide better documentation of NOI resolution. New forms are being added which will require a statement to be made about how NOIs are resolved. Therefore, the concern that engineering writes off NOIs without taking proper corrective action was not substantiated.

BFN

Examination of all CARs and DRs issued since 1984 revealed 10 total related discrepancies. None of the discrepancies concerned improper dispositioning of NOIs and MRs. The discrepancies dealt with the fact that work was completed before formal approval to start work.

An assessment of the program for engineering dispositioning of these items was conducted. Specific Standard Practices BF-7.6 and 8.2 were reviewed to verify programmatic requirements for the dispositioning of MRs. The shift engineer is required to acknowledge work completed (BF-7.6, section 6.5). Interviews with QA/QC personnel did not reveal any additional problems in this area. This concern was not substantiated at BFN.

BLN

Interviews with cognizant personnel that have performed or been associated with the BLN baseline program established that improper NOI documentation or resolution has not been a problem. ISI activities at BLN have been limited to baseline UT and PT inspections on primary system piping. About 50 percent of this program is complete. ISI activities were stopped on June 2, 1985, when the plant fuel load was extended to 1993. It is very likely that the entire program will be repeated starting about two years before fuel load.

The concern that in-service or design personnel have written off NOIs without taking proper corrective action is not valid. ISI inspections are not being conducted at BLN. In addition, this has not been a problem with ISI inspections that have been completed which include only baseline PT and UT inspections. The BLN program will be upgraded in accordance with existing improvements that are being implemented at SQN with the revision of SI-114.1 and 114.2.

The fifth annual Systematic Assessment of Licensee Performance (SALP) report stated, "The implementation of the Inservice Inspection/Inservice Testing programs were well managed, and the inspection and testing activities well organized." ISI administration is controlled from the TVA Central Office and is therefore applicable to all nuclear plants.

Conclusion

This issue was not verified as factual at any of the plants.

Issue 308.04-12 Workplan Signed Off Prematurely (SQN)

Concern JAN-86-001 was a specific incident where a workplan, WP 10512, was prematurely closed out. Interviews with involved personnel and review of workplan established that this concern related to the premature closing of WP 10512 has been completely resolved. No generic problem could be found with premature close out of individual workplans before the drawing markup. In accordance with plant modification procedure AI-19 workplans are not verified complete by the document coordinator until it is verified that the appropriate preceding workplan steps are completed. This includes drawing requirements, spare parts, nameplate data, and post modification tests. This concern was substantiated. However, this concern has been resolved and no further action is required.

Conclusion

This issue was factual but corrective action was initiated before the evaluation took place.

Generic Applicability

The SQN evaluation determined that the incident was an isolated case. No other site evaluations are necessary.

Issue 308.04-13 Motor Operator Grease Inspections Inadequate

Concern JLH-86-001 addresses three separate parts. The first part addresses a concern that the general foreman is signing off MRs for Limatorque operators as "no grease necessary" even if the grease levels are low. This issue is similar to concern TAK-85-004 in element 308.01 where the lubrication inspection of motor operator valve (MOV) limit switches was in question. These concerns were evaluated at all sites.

SQN

This concern was investigated by the SQN QC organization. The grease has been sampled on all Limatorque operators, and maintenance verified that they are properly greased. This was done in accordance with Maintenance Instruction MI-10.46. There was no indication that a foreman had canceled or deleted corrective action. This is documented in the QC inspection report dated June 13, 1986. This concern was therefore not substantiated.

WBN

Limatorque operators are inspected on an 18-month preventive maintenance (PM) schedule and are performed by a small mechanical maintenance group specifically dedicated to motor operators. They are the only group to perform maintenance on motor operators. If grease is required to be added, they are not required to obtain the foreman or general foreman's approval. The foreman reviews the MR upon completion of the work. The foreman has trained this select group on these procedures and relies on their judgments if grease levels are satisfactory.

The general foreman will review the work package only after the craft has completed the work, the foreman has reviewed the documentation and signed it off. The general foreman's approval signature is in the body of the procedure. He has no signoffs to the MR itself. Several PM packages were shown to the evaluator by the foreman. In no cases did the general foreman overrule or change any of the packages. This concern was not substantiated.

BFN

The PM program for Limatorque operators was evaluated in element 308.01 and found to be adequate. Since the shutdown of these units, all of the operators have been inspected and had the grease changed out to new grease. QC inspected all grease changeouts and additions. No specific incidents of inadequate grease levels were identified at BFN. The review of all CARs and DRs issued since January 1984 could not identify problems related to this issue. This concern could not be substantiated.

BLN

Only a few MRs have been turned in at BLN to add or replace the grease in the gearbox of Limatorque operators and the work requested by these MRs was performed satisfactorily. Mechanical Maintenance Instruction BLM MI-4101 "Performance of Lubrication" requires a QC inspector be present when grease is added and the inspector signs off on the MR that the correct type and quantity of grease is added. No DRs and CARs have been written to indicate a problem in this area. This issue was not substantiated at BLN or any other TVA site.

Conclusion

The first part of concern JLH-86-001 was not verified as factual at any of the four TVA plants.

Issue 308.04-14 MRs Signed Off Without Work Being Done

The second part of concern JLH-86-001 alleges that MRs are signed off by the general foreman as complete even if no work has been performed. This issue was also evaluated at all sites.

SQL

Cases were identified to the evaluator that MRs are sometimes closed out without work being completed. MRs A299897, A298222, and A2982200 were signed off without the conduit covers being replaced. A new MR was generated to reinstall covers. Since that time, a new system has been developed which require field tagging equipment out of service. This tag must be removed at completion of work. Thereby when the craft remove the tag an inspection of the equipment will ensure problems such as these will be eliminated. The supervisors have stressed the importance of strictly following procedures and will take disciplinary action when craft signoff a document that is incorrect or incomplete. This concern was therefore substantiated but corrective action was initiated before this evaluation.

WBN

Completed MRs are required to be signed by a supervisor indicating that the work performed by the craftsman was to the satisfaction of the appropriate maintenance section. The foreman reviews the work packages before notifying Operations that the repair work is complete. The general foreman is not required to signoff the MR that work is complete. If an MR references a Maintenance Instruction, the general foreman may then be required to have the final signoff of the instruction but is not required to signoff the MR.

A random sample of 40 closed out work packages from various maintenance sections were reviewed for satisfactory completion of work. Work was verified complete in all 40 of the packages by reviewing signoffs by the workers, foremen, Operations and Quality signatures. Another ten canceled work packages were reviewed to identify any work signed off as complete that was not performed. All of the MRs were canceled due to various reasons identified in the MRs. None of the canceled MRs had work performance or signed off as being complete. No cases could be found in all 50 work packages where the general foreman considered the work unimportant and signed off uncomplete MRs as complete.

In addition, 175 completed work packages were reviewed for configuration changes for Subcategory Report 30700. The conclusion from this evaluation was that the MRs adequately documented that work was performed to the requirements of the work packages. Indications of this were QC signoffs in various steps in the work instructions, verifications of electrical leads lifted and returned to normal; and material forms were referenced indicating that new material was installed during the performance of work. These indications collectively indicate that work was performed and completed. The work packages were closed out, the equipment was tested (if required) and the systems were returned to operable status. The issue that work was signed off as complete even if no work was performed could not be substantiated. No further action is required.

BFN

No incidents were identified at BFN relative to the general foreman signing off uncompleted work as complete. A Maintenance Instruction BF-7.11 was recently revised in September 1986 to ensure and allow that the responsible section supervisor has approval authority for maintenance work not performed. This concern was not substantiated.

BLN

Maintenance personnel interviewed expressed there have been no problems with MRs signed off as complete even though no work was performed. Control at BLN is not a problem because of the few number of MRs that are handled. No DRs or CARs have been written to indicate a problem in this area. This concern was therefore not substantiated.

Conclusion

The second part of concern JLH-86-001 could not be validated at BFN, BLN or WBN. At SQN, it was factual but corrective action was initiated prior to the conduct of the evaluation.

Issue 308.04-15 Non-QA Material Used in QA Application (SQN)

This was the third part of concern JLH-86-001 where non-QA material was allegedly used in QA applications and traceability was falsified on the MR. This issue was evaluated by both the Quality and the Intimidation/Harassment sections of employee concerns.

Conclusion

The third part of concern JLH-86-001 was not evaluated by the operations ECTG.

Issue 308.04-16 Violation of Procedures

SQN concern SQP-85-004-006 was evaluated at SQN, WBN, and BFN for violation of procedures. The specific example cited in the concern was the use of a different torque wrench than was specified in the procedure.

SQN

NSRS Investigation Report I-86-165-SQN indicated that 11 of 16 craft personnel interviewed stated that they had been directed to work without procedures or proper paperwork. Half of the craft interviewed stated they had been directed to use different tools from those required by the procedure. In the specific case cited in the concern, the maintenance supervisor could not refute the finding that a 0-24 in/lb. torque screwdriver was used in lieu of a 0-30 in/lb. torque screwdriver to tighten screws to 20 in/lbs. of torque. The supervisor stated that the torque screwdriver used fulfilled the technical requirement.

Further evaluation of the maintenance procedure program found several areas of concern. A review of the CAR data base found a significant number of violations, twenty-one, that were related to either having inadequate procedures or not having procedures. There have been four violations issued for not following maintenance procedures. The unit 1 violations were also common to unit 2. A survey of the quality assurance records revealed that one CAR (85-05-008) had been issued for not following maintenance procedures.

The fifth annual SALP report rated overall SQN maintenance as category 3, which indicated that both NRC and licensee action should be increased in this area. The report stated that personnel errors by instrument technicians caused several plant trips; however, some technicians performing maintenance tasks were observed using good work practices and implementing the management expressed philosophy of adhering to procedural requirements. It stated that some maintenance instructions were weak or nonexistent for some safety related activities.

There were several procedural violations (6) involving the failure to establish or implement procedures.

The concern that procedure violations occur at SQN was substantiated. This problem has been identified in several evaluations including the NMRG Report R-86-02-NPS. The SQN Maintenance Sections have made substantial progress and significant changes to improve performance in this area and also to provide management feedback if problems are identified by craft. Special maintenance training to craft personnel has been conducted which stressed the importance of following procedures. In addition to special training, electrical maintenance has feedback meetings every workday in which foremen have the opportunity to discuss problems. As identified in the TVA Nuclear Performance Plan, SQN is upgrading its nuclear operation, maintenance, and surveillance procedures, placing increased emphasis on compliance with procedures and has taken steps to identify any developing problems in nuclear operations. SQN is taking steps to improve maintenance accountability and steps are being taken to improve maintenance procedures. This will be followed through the issuance of CATD 30804-SQN-01.

WBN

The NMRG report cited some specific cases where procedure steps were not performed and that maintenance procedures were too restrictive. However, no cases were identified in that report or this evaluation that procedures were actually violated. In the specific case where a torque wrench is required, WBN maintenance procedures only state "Supply a Calibrated Torque Wrench Capable of Torquing to XX ft/lbs." The Mechanical Maintenance Supervisor indicated that this allows a qualified craftsman to select the tools within the capabilities of his skills and experience and does not restrict him to using a specific tool which may be unavailable. Therefore, this concern could not be substantiated at WBN.

BFN

The results of the evaluation at BFN were similar to WBN. A review of the CAR and DR log could find no incidents where maintenance procedures were violated. The specifications for torque wrenches in a procedure are the same as WBN. Therefore, this concern could not be substantiated. Because of several evaluations before employee concerns, including the NMRG report, BFN is involved in a major review and rewrite of maintenance instructions. This program is ongoing and a priority schedule is being established to meet critical commitments.

Conclusion

This concern was not verified as factual at either WBN or BFN. At SQN, it was factual but corrective action had already been initiated prior to the evaluation being performed.

Generic Applicability

This concern was not evaluated at BLN due to it still being in construction status.

Issue 308.04-17 Hanger Removed And Not Replaced (BFN)

Concern XX-85-102-001 deals with an uninspected hanger being removed and never replaced. An inspection program was initiated in 1979 as a result of an NRC IE Bulletin 79-14. This program evaluated the adequacy of piping system supports at BFN. Since then, an additional inspection program is now underway to inspect and evaluate all piping supports that were not initially inspected in 1979. This will be completed before startup. Any deficiency that is found will be corrected by either repairing or reconciliation of drawings. The current ongoing 79-14 program does not have a trending or category report to show how many problems of this type were encountered. Only two related CARs have been issued on this problem since 1984. The current program and procedures cover the requirements for removing and replacing hangers when they are identified in the scope of work to be performed.

Removal of the unspecified hanger could not be validated. However, the 79-14 program currently in progress will identify all conditions (hanger supports) adverse to configuration for disposition. Any missing hangers required for operation of the plant will be reinstalled according to design requirements.

The current ongoing 79-14 program is a "one shot" correction of existing problems, and does not address hanger removal/reinstallation for subsequent activities after program closeout. The existing program and procedures do not address methodology to control removal and subsequent reinstallation of hangers during maintenance/modification activities required to gain access to equipment. This will be rectified via CATD 30804-BFN-01.

Conclusion

This issue was not a problem, but in the course of the evaluation an additional issue was identified that requires corrective action.

Generic Applicability

This concern was evaluated at BFN and could not be validated. A site issue was identified, however, concerning BFN specific procedures. No other site evaluations are necessary.

Issue 308.04-18 Out-Of-Service Tags Being Violated (BLN)

Concern XX-85-122-023 is a personnel safety concern where craft allegedly has repeatedly operated out-of-service equipment; this was not substantiated. In 1984, the Institute of Nuclear Power Operations (INPO) performed a construction audit in 1984 (EDC 84 0608 701) that identified several problems with the station clearance hold order program. BLN responded by revising their clearance procedure BLO-1.2 to emphasize that personnel safety is TVA's highest priority and that each employee is instructed to become thoroughly familiar with this procedure. Future violations of the clearance procedure will be investigated to determine the cause of the violations and disciplinary action will be administered accordingly. Also included was a commitment to conduct annual audits on all the clearances. The audits are performed quarterly on 25 percent of the clearances in accordance with BL SIL-43. A review of three recent audits performed in 1986 found no major discrepancies in the outstanding clearances.

The clearance procedure BLO-1.2 stresses personnel safety throughout the procedure. This procedure has been written to reflect INPO good practices as identified in OP-203, Protection of Employee Working on Electric and Mechanical Components. In interviews with the Operations Supervisor, and the Safety Engineers from both Construction and Nuclear Power, they could not identify any willful violations of the clearance as a result of clearance violations.

At the time this concern was written, the changes described in the findings had been implemented. There have been no clearance violations identified since BLN has implemented this program. No further action is required.

Conclusion

This issue was not verified as factual.

Generic Applicability

This issue was evaluated at the site of concern (BLN) and found to be not valid. No other evaluations are necessary.

3.5 Element 308.05 - Training Program Deficiencies

Issue 308.05-1 Cranes Improperly Used

This issue included two concerns EAC-85-004 and SQP-85-004-005 because of their similarities. Both concerns indicate that operators are side-loading cranes. These SQN concerns were evaluated at SQN, WBN, BFN and BLN for unsafe work practices. American Nuclear Society Institute Standard ANSI-B30.2-1976 strongly recommends the avoidance of side pulls and requires an evaluation to determine that the crane will not be overstressed and that no damage will occur as a result of the side pull. The Occupational Safety and Health Act (OSHA) endorses the ANSI standard.

SQN

Procedure SQM-31 and training lesson plans MTU-EMT-30.1 through 30.6 incorporate the requirements of the ANSI standard and OSHA Bulletin. However, crane operators indicate that side pulls are common. There is confusion as to side pulls being allowed or if engineering evaluations make them acceptable. Training stresses that side pulls are not allowed, whereas, engineering evaluations allow side pulls to occur under various conditions.

A program has recently been set up to evaluate the use of cranes TVA-wide. This is the Crane Consistency Program (CCP). The CCP-Special Project has been chartered to resolve issues of crane operations and has identified side pulls as a significant part of their charter. Ongoing inspections and resolution of problems found are currently being scheduled. This program is relatively new and has not yet issued any formal recommendations on side pulls.

Impact of the potential side pulls was evaluated against the Heavy Loads Program as required by NUREG 0612. No indication, either by interviews or documented inspection, was found that side pulls were performed on spent fuel assemblies or CSSC equipment. Also, Sequoyah Maintenance Instruction MI-9.4 requires inspections of the cranes before use. These inspections effectively preclude use of a damaged crane. Copies of inspections were obtained and reviewed. The inspections noted crane damage that was apparent at the time, and documented repair or justification for non-repair before use. Crane operators perform these inspections and crane operator training on inspections was reviewed and found to adequately cover the required areas of inspection.

Concerns SQP-85-004-005 and EAC-85-004 were determined to be valid in that side pulls have been performed in conflict with crane operator training. Foremen at SQN have not had similar training and the interviews indicated the foremen direct crane operators to perform side pulls. Further, it was determined that the required engineering evaluation was not performed for the majority of these side pulls. No evidence could be found that side pulls have been performed on safety related lifts. However, the findings of this evaluation concludes that programmatic deficiencies constitute a safety related finding. Corrections to these deficiencies will be corrected through CATD's 30805-SQN-01 and 02.

WBN

The CCP-Special Projects indicated that evidence of side pulls had been discovered and documented at Bellefonte and Watts Bar. Review of the crane operator lesson plans determined that side pulls are clearly prohibited by ANSI and OSHA regulations and this information is passed on to the crane operators. Interviews with four qualified crane operators revealed that an awareness of the requirements existed and only one case was cited where a side pull was performed. This isolated case was felt to be the result of inexperience and no future occurrences are anticipated. All four indicated that as emphasis has been placed in training, the potential for side pull performance has considerably decreased. Therefore, these concerns were not substantiated at WBN.

BLN

The only crane operated by Nuclear Power at this time is the Auxiliary Building 150-ton crane. Other cranes will be required to pass inspections before turnover from Construction to Nuclear Power. If any damage is noted, it will be repaired by Construction before turnover. Electrical maintenance crane operators indicated that side pulls are not performed and that foremen have stated that disciplinary actions would result if they were performed. Standard Practice BLN 6.1 Section 2.2.4 explicitly states the limitations placed on side pull performance by ANSI-B30.2. Training of crane operators was found to be adequate. Therefore, these concerns were not substantiated at BLN.

BFN

Interviews with crane operators at BFN and information gathered by the CCP-Special Project revealed that side pulls, although not common, have occurred at BFN. Inspections performed by CCP-SP personnel have not revealed conclusive evidence that crane damage has resulted from side pulls. See CATD 30805-BFN-01 for details.

A review of the crane operator and foreman training lesson plans and attendance logs revealed that the requirements regarding crane side pulls are clearly presented in MTS-110, "Crane Procedures and Administrative Controls." This plan defines side pulls and clearly emphasizes the requirements pertaining to them.

These concerns were found to be valid at BFN, however no evidence was discovered that these practices have had any impact on safety related equipment.

Conclusion

These concerns could not be validated as factual at BLN or WBN.

At BFN and SQN, the concerns were factual and corrective action is being taken as a result of the evaluations performed.

Issue 308.05-2 Plant Personnel Need More Training

Two concerns were categorized under the issue of plant training being deficient. Concern IN-85-495-001 was evaluated at WBN whereas XX-85-016-001 was evaluated at BFN.

WBN

The ONP at WBN is committed to the selection and training of personnel in accordance with the requirements of ANSI-N18.1-1971. This commitment is documented in the NQAM, part III, section 6.1 revision 1 dated November 10, 1986. WBN procedure APP 0202.08 meets those commitments for Mechanical and Electrical personnel. Both electrical and mechanical maintenance training programs at WBN have been submitted to INPO for accreditation, in accordance with INPO-85-002; Accreditation Criteria. Through various INPO evaluations from April of 1986 to February of 1987, the overall results are that the maintenance training program is in compliance with regulatory requirements and responsive to implementation of internally and externally identified enhancements. This concern was therefore not substantiated.

BFN

This concern was evaluated under two separate issues; Adequacy of Procedures (308.01) and Adequacy of Training (308.05). The NSRS report I-85-379-BFN did not address the overall adequacy of maintenance training as stated in the concern. A review of maintenance training found that the entire program has not yet been implemented. Efforts are ongoing to achieve INPO accreditation of

the maintenance training organization which involves a formal program to identify and train all important maintenance tasks. This effort is requiring a heavy workload of all training personnel and has a target date of June 1987. This concern is therefore substantiated. The issue of adequate maintenance training remains open pending implementation of the program to be submitted for INPO accreditation.

A review of the training schedule revealed that, while training is being conducted, the schedule is subject to extensive modifications based on requests from the plant in problem areas. While it is considered important to respond to those requests, evaluation and prioritization of task and/or subject training should be done to ensure that safety-related topics are not replaced with these requested classes. The current practice of training plant-requested topics is considered inadequate to resolve safety-related issues and this finding is safety-related. This will be resolved via CATD 30805-BFN-02.

Conclusions

Concern IN-85-495-001 was evaluated at WBN and was found to be not factual.

Concern XX-85-016-001 was evaluated at BFN and found to be factual; corrective action is being taken as a result of the evaluation.

Generic Applicability

The evaluation of concern XX-85-016-001 at BFN revealed the issue to be limited to BFN due to the current status of the training unit. No other site evaluations are necessary.

Issue 308.05-3 - Unqualified Personnel Operating MOVATS Equipment (WBN)

Concern IN-86-114-001 addressed an issue that the Motor Operator Valve Actuator Test System (MOVATS) is not being operated by qualified craft personnel; it was not substantiated. A review of the training records found that vendor training has been conducted onsite by MOVATS, Inc. between October 1985 and April 1986. Records of this training are not kept in the individuals training files, but each individual who received the training received a certificate of completion. It was determined that the personnel operating MOVATS received this training. Therefore, concern IN-86-114-001 is considered not valid in that MOVATS training was conducted and an adequate level of expertise was documented for the personnel operating MOVATS.

Conclusion

This issue was not verified as factual.

Generic Applicability

This issue was evaluated at the site of concern (WBN) and found to be not valid. No other site evaluations are necessary.

Issue 308.05-4 - Improper Rigging of Reactor Coolant Pump Motors (WBN)

Concern WBN-0217 identified a possible problem with the rigging and lifting of the reactor coolant pump motors (RCP) at WBN while being removed for repairs. This work was performed in accordance with Special Maintenance Instruction SMI-68.f. Interviews with cognizant maintenance personnel indicated that the eye-bolts were, in fact, bent during the lifting of the motors. A change in type of eye-bolt used, (swivel-type) resolved the problem and no further occurrences were noted. Review of SMI-68.f revealed that there were no specific work instructions to perform the lift. Interviews with cognizant electrical maintenance personnel indicated that this is considered "within the skill of the craft."

No evaluation for potential adverse affects to the stators could be found. Post modification testing also did not involve high potential tests or motor current amp tests on the motors.

Concern WBN-0217 was valid. The lifting of the RCP motor stators did result in bent eye-bolts. Follow-up actions did not document or evaluate the potential adverse effects of the lift. As the RCP motors are not safety-related the issue is not safety related.

As a result of this evaluation, CATD 30805-WBN-01 was written to resolve the issue. The response from WBN line management contends that, after a review of all the supporting information, there was no nonconforming condition caused by the minor bending of the eye-bolts in this evaluation. This response was found acceptable.

Conclusion

This issue was factual and corrective action, in the form of a detailed review of the situation, was taken as a result of the evaluation.

3.6 Element 308.06 - Subjourneyman/Journeyman

Issue 308.06-1 - Subjourneymen Performing Journeymen Work

WBN

Nine concerns EX-85-012-001, EX-85-054-002, IN-85-128-001, IN-85-130-001, IN-85-589-002, IN-85-729-001, IN-86-022-002, IN-86-210-002, and PH-85-005-001 were evaluated under one issue: subjourneymen performing work for which they are not qualified. These concerns were not validated. A sample of 100 randomly selected Maintenance Requests (MRs) found that none were signed off by subjourneymen even though they were a part of the work crew. Maintenance Request Procedure AI-9.2, Revision 17 requires that the MR be signed off by the craft responsible for performing the work. No violations to this requirement was found in this sample.

Unlike construction subjourneymen, Nuclear Power subjourneymen are allowed to use power tools. This may have lead to the confusion which caused these concerns to be written.

From the sample MRs, it is apparent that maintenance supervision is utilizing the subjourneyman-level personnel in the manner agreed to by TVA and the Tennessee Valley Trades and Labor Council. Beginning at the regulatory level, standards are in place which clearly spell out minimum experience levels for ONP Maintenance personnel. TVA polices invoke the regulations and lower-level procedures implement the requirements. At the lowest level, maintenance supervisory personnel are following the instruction. This evaluation did not uncover any evidence of equipment being left in compromised or indeterminate quality condition.

SQN

This issue was evaluated at SQN under concern IN-85-589-002; it was not valid. The same differences described above in the labor agreements between Construction and Nuclear Power for the subjourneyman classification exist at SQN. Construction does not allow unskilled personnel to use power tools. Nuclear Power has determined the subjourneyman to be semi-skilled which allows them to perform general shop cleanup, parts retrieval and assisting journeymen under his direct supervision. This may include the use of power tools. The work they perform in the category of assisting journeyman is under the direct supervision of the journeyman and is signed for by the journeyman.

AI-7 and electrical maintenance section letter EMSL E-45 prohibit use of sub journeymen for second party verification signoff on any maintenance work item. Since there is no specific restriction placed on the tasks which sub journeymen are allowed to perform, the verification serves to assure that qualified craftsmen supervise all work. SQN maintenance does presently employ sub journeymen. However, adequate procedural controls exist to prevent the sub journeyman from performing unsupervised work.

Conclusions

These concerns were not verified as factual at either WBN or SQN.

Generic Applicability

All listed concerns were evaluated at WBN and IN-85-589-002 was also evaluated at SQN. All evaluations were found to be not valid. Evaluations at other sites are not necessary.

Issue 308.06-2 - Laborers Used to Perform Mason Work (WBN)

Concern IN-85-693-003 which alleges that laborers perform cement mason work such as pouring concrete, grouting baseplates and laying blocks had been previously investigated at WBN by the NSRS, Report I-85-449-WBN. This investigation found the concern to be factually accurate but not to be in violation of any requirements. The quality of the work is controlled by test sampling and hold point inspections. Interviews with the QA concrete inspectors revealed that none of the laborers work was found unacceptable. Therefore this concern is valid but the practice is acceptable. No corrective action is necessary. An evaluation of this concern was also performed by the Management and Personnel (MP) category of employee concerns in Subcategory Report 71600.

Conclusion

The concern is factual but does not describe a problem that requires corrective action.

Generic Applicability

This issue was evaluated at the site of concern (WBN) and found to be a statement of fact but of no consequence. No other site evaluations are necessary.

3.7 Element 308.07 - Clam Control

There are three similar concerns, IN-85-948-001, 002, and 003 under this element that were evaluated at all four sites as one issue. The issue addressed was how Asiatic clams infest and clog plant water systems which could cause a degradation of the cooling water systems in the event of an accident. In 1981, the NRC mandated that licensees quantify clam infestation and establish a program to prevent degradation of plant equipment due to clam fouling. Each plant has developed a program to control this problem and submitted these commitments to the NRC. The programs at each plant have been in place now for several years and have been periodically revised to improve the programs. Included in these various programs are chlorination of the plant cooling systems (both normal and emergency) and fire protection systems that take suction from the lakes/streams, periodic inspections for clam infestation and periodic testing to ensure the system has not been degraded. Results of these programs have found isolated cases where clams have been discovered in these systems, however, there has been no indication of any massive or recurring problem with clams at any plant. Therefore, except for one incident, these concerns were not substantiated. The incident was that blockage was found in the high pressure fire protection system at WBN during startup. A determination was made by Nuclear Power that the blockage was a result of debris left in pipe during construction. The engineering category of employee concerns had the responsibility for the evaluation of several concerns on this subject under subcategory 233.

At BFN and SQN, a finding was discovered that was related to this issue. A commitment was made to the NRC that an evaluation shall be performed on equipment failures that result in extended loss of chlorination capability. No procedures could be found addressing this commitment. See CATD's 30807-BFN-01 and 30807-SQN-01.

CATD 30807-JLN-01 was written and submitted to BLN requesting that the plant prepare SIs, for addressing clam control. BLN line response delineates the controls presently in place do address this situation and demonstrate that there is no oversight on their part in meeting the stated commitments.

Conclusions

At BFN, all three concerns were confirmed as not factual.

At BLN and SQN, IN-85-948-001 did not, in itself, present a problem, but the evaluation discovered an additional issue which required corrective action. The other two concerns were not validated at these two plants.

At WBN, IN-85-948-002 was found to be factual but corrective action was initiated prior to the evaluation being done. The other two concerns were not validated at WBN.

4.0 COLLECTIVE SIGNIFICANCE

A collective assessment of the element-level findings (section 3.0) led to the identification of subcategory-level findings which reflected adversely on management effectiveness:

- a. Overall procedural inadequacies have been identified in maintenance based on deficiencies found.
- b. The overall maintenance program including preventive, predictive, and corrective aspects has no specific direction or overall policy to identify the goals and objectives the program should satisfy.
- c. The as-constructed configuration of plant equipment does not always reflect the vendor technical manuals controlled at the plants. The topic of configuration control is further discussed in Subcategory Report 30700.
- d. The overall training of maintenance personnel has not included sufficient training in specific areas of specialized equipment or processes and general training for adequately documenting all work performed under the maintenance (MR) program.

Note: Similar symptoms and root causes were identified in NMRG report R-86-02-NPS.

Maintenance Procedural Program

The basis for finding 4.a was supported by specific elements detailed in the subcategory reports, as follows:

- Upper-tier requirements not always incorporated: Subcategory Reports 30200 (BFN) and 30800 (SQN). |R2
- Equipment failure not trended: Subcategory Report 30800 (BFN) |R2
- Preventive Maintenance not complete: Subcategory Report 30800 (WBN, SQN and BLN). |R2
- MR instructions do not contain step signoffs or acceptance criteria as recommended in INPO Guidelines 85-038: Subcategory Report 30700 (WBN) |R2