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Conclusion

The issue was not verified as factual.

Issue 311.04-9 - Adequacy of SQN HP Program (Miscellaneous)

SQN

This issue covered eight items of concern relating to the adequacy of the SQN HP program. The issue involved the implementation of the program, lost sources, monitor locations smears, and air samples. One item involved charges of intimidation and harassment and was referred to the office of the inspector general. None of the other seven items were substantiated. Their findings are discussed below.

The item that TVA lacked the ability to run an HP operation was not substantiated. It was determined by reviewing procedures and audits/evaluations, observing implementation of the instructions, reviewing program documentation, performing walkdowns, and interviewing HP personnel that TVA did not lack the ability to run an HP program. Past NRC reports had given radiological control satisfactory and high level of performance ratings. INPO had also identified a Good Practice in one of their evaluations.

Additionally, the HP program at SQN is under the direction of an individual who meets the qualification criteria for the position of Radiation Protection Manager as required by Regulatory Guide 1.8.

The item on an unreported loss of a radioactive source was also not substantiated. It was found that procedures provided guidelines for source inventory and control and that the sources were routinely inventoried on a weekly basis and documented accordingly. Inventories from 1985 and 1986, which was the time frame of the alleged incident, were reviewed with no discrepancies being found. In addition, this evaluation made an independent survey of the source locker and verified that all sources were accountable. In addition, interviews with HP technicians indicated no recollection of a missing source as described in the concern.

Radiation monitors not being located according to procedure ASIL-3 was also not substantiated. The attachment to ASIL-3 contained a list of the radiation monitors and their location. Two HP technicians who had completed performance verification sheets within the last year stated that all monitors were in the proper locations. Additionally, a random verification was performed by walkdown and found that those monitors checked were located in accordance with ASIL-3's attachment.

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The items concerning smears being thrown into the trash and the smears counting area being used as an eating area were not substantiated. The evaluation for these items consisted of interviewing HP field operations personnel and observation of the counting facilities and review of applicable procedures. It was determined that smears were handled on a designated countertop in the counting room which is posted as a regulated area (i.e., no eating, drinking, or smoking allowed). Other areas of the counting room were not regulated areas. The HP lab counting room and regulated countertop were required to be surveyed daily. Any contamination found in these areas were required to be immediately decontaminated. Smears were required to be placed in a "contaminated material" container and not in normal trash receptacles.

The item of concern about air samples being taken improperly (i.e., at floor level) and respirators not being worn in high contamination areas was not substantiated. It was determined through interviews with HP trainers and training supervisors that technicians were instructed on the placement of air samples to achieve a representative sample of the workers' breathing zone and in the avoidance of contaminated surfaces. Random observations of technicians pulling air samples revealed proper sampling practices. All technicians observed were also knowledgeable of the required task. In regard to the use of respirators in high contamination areas, it was determined that guidelines have been established for respirator usage in NUREG 0041 and were implemented at SQN. Contamination levels which exceeded 10,000 dpm was the basis for the use of respiratory protection. Randomly selected RWPs were reviewed to verify technicians followed the guidelines provided in HP procedures. All RWPs reviewed met these guidelines.

The last item of this issue dealt with HP technicians not covering the air sampler heads before and after exiting areas that were monitored. This item was not substantiated based on interviews with an HP supervisor and reviewing applicable HP procedures. There were no requirements for covering air sample heads before or after sampling. Technicians were taught to avoid cross contamination of the sample filters; however, the method of accomplishing this was left to the discretion of the technicians. Observations of technicians pulling air sample revealed proper sampling technique. In the event cross contamination occurred, the resulting air data would err in a conservative way and would not compromise worker safety.

Conclusion

This issue could not be verified as factual.

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3.5 Element 311.05- ALARA

Issue 311.05-1 - Winning ALARA Suggestions Not Implemented

BFN

The concern in this issue cited three specific items where modifications had not been implemented based on winning ALARA suggestions. The first suggestion dealt with a piping modification to drain to a sump/drain external to the area and was not substantiated. No evidence was found in the ALARA files due to the vagueness of the concern; however, the ALARA group had implemented a program that addressed this type of problem site-wide through the use of two methods of contamination control. These methods would help eliminate the occurrences as described by this suggestion.

The second suggestion involved installing shielding between the Fuel Pool Cooling Heat Exchanger and Reactor Water Cleanup (RWCU) precoat area and was also not substantiated based on the findings of the investigation performed by the ALARA staff which detailed a cost-benefit analysis of the suggestion. The analysis had weighed several factors which included average manhours spent in the area, average exposure rates, initial cost of implementation of the suggestion, and the time required to recover that cost. The results had indicated that it would not be cost effective to implement the suggestion at that time. This evaluation concurs with findings of the ALARA staff.

The third suggestion was in regard to relocating the drywell control air suction filter blowdown valve to outside the drywell and was substantiated. Corrective actions are in the process of being evaluated at BFN. Based on a review of the ALARA files and case histories and interviews with ALARA personnel, this suggestion had been recommended to be implemented. However, due to the lack of a response to several correspondences sent to the Electrical Maintenance Section requesting their review and investigation of the suggestion and the lack of a tracking system by the ALARA staff, the suggestion had not been acted upon or implemented. The ALARA staff had been developing several methods to track ALARA suggestions to prevent problems of this nature in the future, which included the development of a computerized tracking system and addressing suggestions which show no progress of implementation in the ALARA committee meetings. Suggestion #3 has been scheduled as a review topic in the next meeting for implementation and corrective action. CATD 31105-BFN-01 and -02 were issued to address this problem.

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Conclusion

Concern #3 of this issue was factual and identified a problem for which corrective action is being taken as a result of an employee concern evaluation.

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Issue 311.05-2 - Hazards Associated with Manway Doors

WBN

The two concerns regarding personnel safety in opening the manway door at the bottom of the steam generator was substantiated in a previous investigation by NSRS (Report No. I-85-558-SQN) and an ALARA review (No. 001-86); however, corrective actions had been implemented by WBN. It was determined in the NSRS report that the present method of removing bolts from the primary manway covers was hazardous and increased radiation exposure time. The new tensioning method designed by Westinghouse (WB-DCR-652) would require considerably less time (20 manhours) to complete and would achieve lower doses for the personnel involved. Additionally, it was reported that the problems associated with the removal of the manway covers was compounded by working in cramped environments (i.e. steam generator platforms). WB-DCR-629 was written to modify the platforms to provide more space and allow equipment to be transferred to other generators thereby minimizing the possibility of equipment damage, personal injury, and reducing exposure time. ECN-6115 was submitted for the installation of the new equipment for the platforms. The ALARA review supported the fact that a significant amount of radiation exposure time would be reduced with the use of other methods to open and close the covers. This evaluation concurs with findings of the NSRS and ALARA review. CATD 31105-WBN-01 which will implement modification of the steam generator platform. CATD 30108-WBN-01 was issued to track the new stud-tensioning device.

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This evaluation also determined that Mechanical Maintenance was revising MI-68.7 to caution personnel to stay clear of the swing arm when the covers were being raised and lowered.

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SQN

The two concerns regarding personnel safety in opening the manway door at the bottom of the steam generator were substantiated in a previous investigation by NSRS (Report No. I-85-558-SQN) and corrective actions have been implemented at SQN. It was determined in their evaluation that personnel safety was a significant issue in handling manway covers because of space constraints, weight of the covers, and restrictive protection clothing. The investigation by NSRS had referenced a schedule for implementing a stud and nut configuration for securing the steam generator covers. This substitution was expected to eliminate problems seen with the bolts presently used and reduce the time required to install the manway covers. Site services at SQN had stated that contracts would be issued for this configuration in the immediate future. Furthermore, SQN was investigating the use of electric hoists for handling the manway covers. In addition to the proposed design changes, a new manway shield was utilized which has been effective in reducing exposure rates at the steam generator openings. Site Services also had studies underway to explore other mechanisms that would enhance the safety and reduce closure times. This evaluation also determined that ALARA preplan reports 85-063 and 86-020 adequately implemented the requirements of RCI-10 in regard to precautionary actions taken to reduce personnel exposure. This evaluation concurs with the findings of the NSRS.

Conclusion

This issue is factual and identifies a problem at both SQN and WBN, but corrective action for the problem was initiated before the employee concerns evaluation of the issue was undertaken.

Generic Applicability

This issue was evaluated at SQN and WBN as the steam generator designs are essentially identical. It was found at both plants that the adequate corrective action had been initiated prior to the ECTG evaluation. No other site evaluations are necessary, as the steam generator design at BLN is different and BFN has no steam generators.

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Issue 311.05-3 - Time Required to Repair/Recalibrate Instrumentation

WBN

Two concerns were evaluated for this issue at WBN. The concern raising an ALARA question about repairing and calibrating process monitoring instrumentation equipment in a potentially high radiation area was substantiated in an ALARA Review 86-X1016; however, corrective actions have been implemented by WBN to correct the problem. It was determined in the ALARA review and by observation that the instrumentation mentioned in the concern was located in a potentially high radiation area at WBN based on radiation data from SQN and FSAR, Volume 12. The relocation of the panel was scheduled to be discussed by the ALARA committee to determine the responsible action party. This evaluation concurs with findings of the ALARA review. CATD 31105-WBN-02 was written to obtain current status and schedule for moving panel O-L-14. |R1

The second concern involved the time required to repair or calibrate equipment in the Unit 1 raceway and was substantiated in a ALARA Review 86-009; however, corrective actions have been implemented by WBN. The findings of the ALARA review determined that by replacing the transmitters mentioned in the concern with newer, more reliable equipment as described in WB-DCR-597, 48 manhours would be saved per calibration. The current equipment also had a high failure rate which would have increased the exposure received due to repair work. ECN-6005 was issued to install the new equipment which will make calibration and repair work more efficient, thereby reducing radiation exposure time. The current evaluation concurs with the findings of the ALARA review. CATD 31105-WBN-03 was written to track the closure of ECN-6005. |R1

SQN

Two concerns were also evaluated at SQN for this issue. The WBN concern involving recalibration of the level transmitter located in the Unit 1 raceway was not substantiated at SQN. It was determined by visual inspection and reviewing survey data and RWP timesheets that panel O-L-14 was not located in a high-radiation area. There was also no evidence of action levels established in RCI-10 being exceeded which would warrant ALARA evaluation or constitute an ALARA concern.

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The second WBN concern involved the time required to repair and calibrate process monitoring instrumentation in a high radiation area and was not substantiated based on the low exposures received for maintenance and calibration of the level transmitters. It was found that radiological survey data indicated that the referenced activities involved personnel exposure levels too low to be considered ALARA concerns. Therefore, no ALARA evaluation was warranted.

Conclusion

This issue at WBN was factually accurate and identified a problem, but corrective action for the problem was initiated before the employee concerns evaluation of the issue was undertaken. This issue at SQN could not be verified as factual.

Generic Applicability

This concern was evaluated at SQN and WBN due to this similarity of design and layout. No other site evaluations are necessary.

Issue 311.05-4 - Unrestricted Access to High Radiation Areas

WBN

Two concerns address the issue of unrestricted access to potentially high radiation areas at WBN. The first concern involved the area of the RCS loop penetration through the reactor shield wall and was substantiated in the ALARA Review 86-005; however, no corrective action was required. The ALARA review indicated that instructions did exist concerning high radiation area posting and requirements for entry inside the polar crane wall area. Instructions RCI-14 and Technical Specification 6.12.2 both stated that for high radiation areas (greater than 1,000mr/hr) accessible to personnel where no enclosure could be reasonably constructed around an individual area, then that area should be barricaded, conspicuously posted, and a flashing light should be activated as a warning device when the reactor is at power; the Plant Manager will also review and approve any lower containment entry before an individual is allowed access to the high radiation area. An interview by this evaluation confirmed that HP will also provide constant coverage for these entries and Public Safety will guard containment entrances. This evaluation concurred with the findings of this report.

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The other concern in regard to the area of the return air duct from the regenerative heat exchange inside the polar crane wall was substantiated by an ALARA Review 86-003; however, corrective actions have been implemented to prevent unrestricted access. The ALARA review determined that the return air ducts for the regenerative heat exchangers could be reasonably barricaded with a grating in the shape of a T-bar that could be positioned to satisfy requirements in radiological control instruction RCI-14 and Technical Specification 6.12. Additionally, it was found that a locking device needed to be installed on the grating that covers the opening in the floor of the regenerative heat exchanger. However, the RC 5 loop penetrations in the reactor shield wall could not reasonably be barricaded due to possible movements caused by thermal expansions and confined space. It was also stated that HP personnel will provide constant coverage and post the areas as required by procedure. This evaluation concurred with the findings of the ALARA Review. CATD 31105-WBN-04 was written to obtain the status and provide a schedule for the T-bar installation. | R1

Conclusion

This issue is factual and identified a potential problem but corrective action for the problem was initiated before the employee concerns evaluation of the issue was undertaken. | R1

Generic Applicability

This issue was discovered at WBN as an ALARA concern based on the experience gained from SQN. BLN and BFN are not similar in design and therefore evaluations were not necessary. |

Issue 311.05-5 - Safety Hazards Associated With Access to Valve

WBN

The concern addressing the need of relocating valves on SIS accumulators to reduce the safety hazard and exposure time was substantiated in the WBN Access Survey; however, corrective actions have been implemented. This evaluation concurs with the WBN Access Survey. Additionally, a Hazard Assessment Worksheet IM-006-85 was performed on this issue. Based on the Access Survey, it was determined that before maintenance and calibration could be performed on the SIS accumulator valves, carpenters and steamfitters were required to perform their tasks in confined spaces in the upper accumulator rooms. Instrument maintenance had suggested moving the valves to a lower, more accessible location which reduced potential | R1



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scaffolding accidents and reduced exposure time. As a result, WB DCR-633 was issued for new interfacing of the SIS accumulators which would relocate the accumulator level instrumentation, reduce manhour expenditure, and limit potential radiation exposure. By relocating the valves and instrumentation to a more accessible area, the need for scaffolding and the associated safety hazard would be eliminated. CATD 31105-WBN-05 was written to track closure of DCR-633.

Conclusion

This issue is factual and identifies a problem, but corrective action for the problem was initiated before the employee concerns evaluation of the issue was undertaken.

Generic Applicability

This concern was evaluated at WBN only. However, the issue was also evaluated at SQN under concern IN-85-189-001. This concern was not evaluated at BFN or BLN due to the absence of valid, safety related findings at WBN or SQN. Additionally, it was found at the subcategory level that access problems are likely to exist at all sites. Therefore, corporate action will address this possibility, precluding specific evaluations by Operations at BFN or BLN.

Issue 311.05-6 - Generic - ALARA Program

WBN

INPO, in May and June of 1985, conducted a Construction Project Evaluation identifying that the TVA WBN's ALARA design review program needed to be expanded (Finding DC-2-1). The INPO finding stated "the radiation protection section is not reviewing all appropriate project drawings to ensure that ALARA considerations are addressed." As a result of incomplete reviews, some equipment was being located unnecessarily in high radiation areas which violated Safety Evaluation Reports commitments 12.002 and 12.005. TVA agreed that improvement in this area was needed. As a result, an ALARA Engineering walkdown of Unit 1 at WBN was performed to meet commitment of the NRC Deviation which stated, "complete the review of plant walkdown of Unit 1 to ensure that ALARA problems during operations are minimized." WBN QA also performed the ALARA walkdown in response to a Plant Compliance request to verify adequate completion of the HP walkdown. There were 182 ALARA concerns identified. HP at WBN is currently reviewing the ALARA concerns to determine their disposition. CATD 31105-WBN-06 was written to track the closure of the NRC deviation

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The NQAM emphasizes reviews of ALARA-related DCRs/ECNs, and FSAR Vol. 12 commits the ALARA program to assure that specific administrative documents and procedures "emphasize the importance of ALARA through the design, testing, startup, operation, maintenance, and decommissioning phases of TVA nuclear plants." The ALARA program adequately addresses these commitments in AI-2.7.1, 3.5, RCI-1, and the Radiological Protection Plan (RPP). These procedures emphasized ALARA-related reviews of DCRs, plant procedures, pre-job planning, purchasing, contracting, construction, maintenance, and operating activities.

#### SQN

A review of NRC and Nuclear Quality Audit and Evaluation (NQA & E) Branch Reports was conducted regarding the SQN ALARA program. The NRC reports indicated weaknesses in the SQN ALARA Committee reviews of pre-and post-job assessments and the employee suggestions program. These items will be reviewed by NRC in a follow-up inspection; however, in regard to the ALARA program at SQN, no violations or deviations were identified.

The NQA & E audit reports revealed four deviations in the ALARA program at SQN. The first involved the lack of incentives and encouragement for employees to participate in the employee suggestion program. In item #2, it was found that annual ALARA reports were not issued on time. Item #3 related to the ALARA Preplanning Reports requirements not adequately addressing Regulatory Guide 8.8 requirements, and the last deficiency dealt with record retention of RWPs and ALARA reports. A CATD was written on each of these deviations for line management response (31105-SQN-01, -02, -03, and -04). | R1

Although NRC and NQA and E audits indicated several problems in the SQN ALARA program, this evaluation concluded that within the scope of the concerns assigned to this element, the ALARA program was effective and adequate in identifying and minimizing radiological hazards.

#### Conclusion

This issue is factual and presents a problem for which corrective action is being taken as a result of the employee concerns evaluation. | R1

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3.6 Element 311.06 - Health Physics, Clothing, and Protective Equipment

Issue 311-06-1 - Leave Site Without Monitoring

WBN

The SQN concern in regard to personnel leaving the site without a final check for contamination was a statement of fact; however, it was not a problem at WBN. Due to the status of operation at WBN, there were no contaminated areas in the plant. It was also determined that there was no requirement for performing a final check for contamination before leaving the site. |R1

SQN

The concern stating that personnel can leave the site without a final check for contamination was not substantiated. SQN's HP Department had provided instrumentation throughout the plant for workers to monitor themselves for contamination in the form of portal monitors and friskers. In addition, a permanently manned control point was staffed with HP technicians to observe and control personnel and equipment exiting the regulated area. Administrative controls were also found to reasonably ensure personnel were monitored. In the event an individual deliberately bypassed the monitoring process, the individual was subject to having an Radiological Inspection Report (RIR) written and corrective or disciplinary action taken. |R1

BFN

The concern in regard to leaving the site without monitoring evaluated at WBN and SQN was not substantiated at BFN. It was determined by a physical inspection of the plant that monitoring systems were utilized to prevent the spread of contamination when exiting C-zones and regulated areas. In addition, portal monitors were located in the gatehouse exits to monitor personnel leaving the controlled area. Based on an interview with HP personnel, additional frisking systems are provided to ensure a final contamination check at the gatehouse exits in the event portal monitors were out of service.

BLN

The same concern was not substantiated in the evaluation for BLN. There were no contamination areas at BLN due to the status of the plant; therefore, there was no need or requirement for monitoring before leaving the site.

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Conclusion

This issue could not be verified as factual at any site.

Issue 311.06-2 - Lack of Portal Monitors at Plant Exits

WBN

The SQN concern stating that no portal monitors exist at plant exits was a statement of fact at WBN; however, it was not considered a problem. It was determined that since WBN had no contaminated areas because of its status, no requirements for monitoring at plant exits existed.

SQN

The concern that no portal monitor exists at the plant exit was not substantiated. It was determined by visual observation that there was a portal monitor at the plant exit. However, the use of this monitor was not mandatory and there were no regulatory, TVA, or SQN procedural requirements for its usage. Portal monitors were placed there for the benefit of concerned employees and to provide a greater confidence in the radiation protection program.

BFN

The SQN concern evaluated at BFN in regard to lack of portal monitors was not substantiated. A portal monitoring system was observed to be in place and operating at the plant exits in accordance with FSAR-BFNP. Two identical portal monitors were located in each plant gatehouse. In the event the monitors were out of service, HP personnel stated that additional friskers would be provided to ensure a final check.

BLN

The same SQN concern was evaluated at BLN and found not substantiated. Portal monitors were not needed or required at BLN due to the status of the plant (i.e., no radiation or contamination areas).

Conclusion

This issue could not be verified as factual at any plant.

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Issue 311.06-3 - Method of Collecting Self-Reading Dosimeters

WBN

Two concerns were evaluated at WBN involving the use of metal boxes being used to collect self-reading pocket dosimeters which could cause the dosimeters to be knocked off-scale. Neither concern was substantiated at WBN. It was found that the collection boxes at WBN were lined on the bottom with a foam/sponge material and were designed to allow dosimeters dropped into the box to roll down an incline to the bottom. Examination of dosimeter reading records for WBN showed no evidence of dosimeters being knocked off-scale. Additionally, if the dosimeters were knocked off-scale and an individual did not record his dose on his dose card, an individual's TLD would still provide the official dose record.

SQN

The concern stating that self-reading pocket dosimeters were collected in a metal box was factual as identified by a TVA Radiological Health Staff Line Report. The line report also stated that pocket dosimeters were no longer being collected in drop boxes but were being stored in TLD dosimeter badge racks in a specific slot identified by TLD number. In the past, off-scale readings were reported in only .018 percent of the total dosimeters dropped at SQN. This evaluation concurred with the findings of line report.

BFN

The SQN concern regarding the collection of dosimeters in metal collection boxes was a statement of fact at BFN but was not considered a problem. It was found that collection boxes at BFN were collected in a foam padded metal box which would reduce the possibility of the dosimeter going off-scale. Although off-scale dosimeters had been turned into Dosimetry, the actual number attributed to being dropped in collection boxes could not be determined. Off-scale dosimeter readings result in an investigation and determination of an individual's actual dose by reading the TLD worn by the individual.

Conclusion

This issue was factually accurate, but what it describes is not a problem.

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Issue 311.06-4 - Use of Face Masks

SQN

The concern noting that some personnel were required to wear face masks while others in the same area (including HP) were not, was substantiated as a statement of fact; however, no corrective actions were required. The occurrences described in the concern had occurred at SQN but were justifiable based on the conditions detailed on the applicable RWPs. Respirator usage was based on the job assignment and not necessarily the area where the work was performed. Based on interviews and review of procedure, audits, and other documentation, no evidence was found to conclude that the SQN Respiratory Protection Program was not properly and professionally administered in accordance with all applicable requirements. In addition, interviews with HP technicians revealed that they were aware of protective equipment requirements and make adjustments to respiratory usage in an area if required.

Conclusion

This issue was factually accurate, but what is describes is not a problem.

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Issue 311.06-5 - Unavailability of small-sized Gloves

WBN

The SQN concern regarding not having enough C-zone gloves in the small-size was not substantiated at WBN. At the time of the evaluation, the ordering process for C-zone gloves had not been implemented. However, specifications for protective clothing had been developed which included various sizes of gloves.

SQN

The concern regarding the lack of enough small-size gloves was substantiated at SQN; however, corrective actions were implemented after the problem resulted in an injury. It was determined that as a result of the incident which involved the usage of gloves that were too large, smaller gloves were utilized at the site. It had been indicated in an interview that it was not practical to order every size glove, so only the most common sizes were ordered. It was found that SQN Power Stores now stock the smaller sizes and that there have been no other safety incidents regarding the use of gloves.

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BFN

The SQN concern evaluated at BFN involving the lack of purchasing smaller size gloves was not substantiated. It was determined that the glove size ordered at BFN had been adequate and that no requests for ordering additional sizes had been received by Building Services. No complaints concerning insufficient quantities of various size gloves were identified based on interviews with cognizant personnel.

BLN

The same SQN concern was evaluated at BLN and determined not substantiated. The delayed condition of the plant had dictated that C-zone clothing items including gloves were not to be ordered at this time. Therefore, the problem of not ordering smaller sized gloves could not be evaluated.

Conclusion

At SQN, this issue was factual and identified a problem, but corrective action for the problem was initiated before the employee concerns evaluation of the issue was undertaken. At all other sites, the issue could not be verified as factual.

Issue 311.06-6 - Reuse of Outer Gloves

WBN

The SQN concern regarding the reuse of contaminated outer gloves was previously investigated by NSRS (Report I-85-652-SQN). It was not substantiated at WBN. There were no contaminated areas at WBN; therefore, there were no contaminated clothing being generated or laundered. Procedures for laundry operations and contamination control at WBN were being developed at the time of this evaluation and will establish contamination limits in accordance with NRC guidelines and TVA procedures.

SQN

The concern regarding the reuse of contaminated outer gloves was substantiated as a statement of fact in a previous investigation by NSRS (Report I-85-652-SQN); however, it was not considered a problem. The investigation determined that the level of fixed contamination was within prescribed levels for cleaned protective clothing as required by the PPP. This was based on a random sample of C-zone gloves and shoe covers. It was also found that the reuse

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of such gloves with fixed contamination at established levels was not found to represent "insufficient attention to detail" as described in the concern. However, NSRS did recommend that GET lesson plans be revised to better explain fixed contamination levels to workers. It was determined by reviewing the applicable lesson plans that Training had made revisions to the applicable GET HP courses. This evaluation concurred with the findings of the NSRS report.

BFN

The SQN concern in regard to the reuse of outer gloves was factual but not considered a problem at BFN. It was determined through interviews and review of applicable procedures and reports that protective clothing was surveyed by the laundry monitoring system and/or technicians before being released for reuse. Trip points were set on monitors to ensure contamination levels on protective clothing did not violate plant procedures. In addition, random surveys of protective clothing were also performed on the stocked shelves in the plant to ensure contamination levels were within acceptable limits.

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Conclusion

At SQN and BFN, the issue was factually accurate, but what it describes is not a problem. At WBN, the issue could not be verified as factual.

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Issue 311.06-7 - Post Accident Sampling Room

WBN

The concern stating the post accident sample room was too small to dressout was previously investigated by line management at WBN and was not substantiated. It was determined that the Post Accident Sampling Facility (PASF) was neither designed to dressout, nor was it intended that dressout be accomplished there. It was also found in this evaluation that training for PASF activities included dressout in a designated area before entering the Auxiliary Building which contained the PASF. This evaluation concurred with the findings of the line management report.

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Conclusion

This issue could not be verified as factual.

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Issue 311.06-8 - Unavailability of C-zone Clothing

SQN

The concern over the availability of proper C-zone clothing for entering the Condensate Demineralizer Waste Evaporator (CDWE) Building was not substantiated. It was observed during a walkthrough inspection that protective clothing was readily available for entering the CDWE. Clothing bins were found at the 706-foot elevation entrance to the CDWE Building and were stocked. An interview with a Building Services employee did reveal, however, that they did not routinely stock the clothing bins at the 706-foot elevation but were typically stocked by individuals for their own use.

Conclusion

This issue could not be verified as factual.

Issue 311.06-9 - Location of TLD Badge Racks

WBN

The concern regarding the location of TLD badges near the main steam lines was a statement of fact at WBN; however, it is not considered a problem. TLD badge racks were found at the Dosimetry Issue Building under the main steam lines. However, due to the status of WBN, it was determined that there was no chance of a primary to secondary leak that would affect TLD badges. Based on interviews with HP and Dosimetry personnel, it was stated that an alternative location for the badge racks and plans for separate Dosimetry Building were being evaluated.

Conclusion

This issue could not be verified as factual.

Issue 311.06-10 - Unrepaired C-zone Clothing

WBN

The SQN concern stating that C-zone clothing were not being patched by the laundry was not substantiated. There were no contaminant areas at WBN which required C-zone clothing, therefore, no C-zone clothing was generated.

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SQL

The concern noting C-zone clothing were not being patched by the laundry was substantiated, and corrective action was required. Visual inspections of C-zone laundry and interviews were conducted with laundry personnel. Although it was possible to find C-zone clothing with holes, it was apparent that the laundry did routinely patch or repair damaged C-zone clothing. A random sample of 21 laundered C-zone clothing revealed that 8 were patched, 11 had one or more holes of less than 1/2 inch diameter. Based on the fact that half of the items surveyed were found with unpatched holes, this indicated that the plant's efforts to maintain serviceable C-zone clothing were inadequate. However, it was stressed in memorandums and training that each worker had the responsibility to ensure the serviceability of his protective equipment. CATD 31106-SQN-01 was written to identify this problem to line management.

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BFN

The SQL concern in regard to unrepaired C-zone clothing was not substantiated at BFN. Based on interviews and review of NRC and INPO inspection reports, it was determined that protective clothing was surveyed and inspected in accordance with radiological control instructions before being released for use. No sampling was done at BFN because of the lack of violations (indications) at BFN. No violations were identified in the use of protective clothing for the past two years. For visible defects that were detected, a heat sealing machine was used for repairs.

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BLN

The same SQL concern was not substantiated at BLN. It was determined that due to the status of the plant, C-zone clothing was not being used or processed by plant personnel. Therefore, no requirement for laundry operations existed.

Conclusion

This issue was identified as factual at SQL and presented a problem for which corrective action has been or is being taken as a result of employee concerns. At all other sites, this issue could not be verified as factual.

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3.7 Element 311.07 - Radioactive Effluents/Uncontrolled Areas

Issue 311.07-1 - Inadequate Provisions to Protect Personnel from Radiation Between Units

WBN

The three concerns that involved potential airborne radiation releases from Unit 1 which could affect personnel in Unit 2 were not substantiated. Due to the status of WBN, there were no known sources of airborne radiation releases and no observations of associated activities could take place. However, it was determined that Administrative Instruction, AI-1.6 established interface points between Unit 1 and Unit 2 to ensure "the integrity of Unit 1 operation" and to "minimize potential radiological hazards to personnel completing construction and testing of Unit 2." It was observed that security barriers were in place to aid in the identification and control of radiological hazards by limiting access providing boundaries between areas requiring personal monitoring and in limiting the spread of contamination. During normal operation of Unit 1, it was found that routine radiation, contamination, and airborne surveys would be taken at the fence between Units 1 and 2 and in rooms and corridors containing common system piping. In addition, continuous air monitors sample the air at designated locations. The Radiation Emergency Plan (REP), GET, and plant procedures also provided instructions to workers in the event airborne radioactivity was detected above the established limits.

|R1

Conclusion

This issue could not be verified as factual.

|R1

Issue 311.07-2 - Unrepresentative Air Quality Checks

WBN

The concern regarding the number of air quality checks needing to be more representative was not substantiated. It was determined by reviewing survey results and applicable procedures and conducting interviews with cognizant personnel that airborne radioactivity surveys were made on a continuous routine and unscheduled basis. Surveys were performed in both inside and outside potential radiological areas. In addition, breathing air quality tests were performed to ensure the breathing air met specifications and requirements of 29CFR1910. No violations of any regulatory requirements or management policies were identified.

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Conclusion

This issue could not be verified as factual.

Issue 311.07-3 - Impact on Environment/Public

WBN

The concern in this issue questioned the impact of normal WBN operation on the surrounding area as well as the effect of radiation on the public was not substantiated based on a previous investigation by WBN line management and this evaluation. Line management had determined that the WBN Environmental Statement (ES) had addressed the impact during normal operation of WBN on the surrounding areas which involved land use, water use, fossil fuel consumption, chemical effluents, and radioactive effluents. The ES was prepared for the NRC and made available to the public and other agencies in 1978. In addition, this evaluation reviewed the FSAR and applicable plant procedures which expressed that during normal operation of WBN, regular and constant monitoring of effluents would be conducted to ensure effluent levels met Federal regulations and TVA requirements for minimizing exposure to the public.

Conclusion

This issue could not be verified as factual.

Issue 311.07-4 - Uptake of Radioactive Substances Due to Similar Fittings

WBN

The WBN concern in this issue identified the potential of radioactive substances being introduced into other systems due to similar connections being used for service air, demineralized water (DW), and contaminated drain connections and was substantiated at WBN; however, corrective actions have been implemented based on ALARA Review 0291 and NRC Audit 50-390/85-20. Based on their findings, two possibilities for wrong hookup were identified: 1) connecting a breathing air manifold to a DW line, and 2) using contaminated hoses for connecting breathing air manifolds to Service Air. The NRC audit recommended tagging all Service Air lines to denote "Service Air Outlet." A random inspection confirmed that they had been tagged and were inspected regularly for compliance.

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To prevent the use of contaminated hoses for connecting breathing air manifolds to Service Air, HP was revising TSIL-19 to include requirements for HP certification of manifold installation before use, a hold order requirement on Service Air valves and designated air lines for hookup. This evaluation concurred with the findings of these reports. CATD 31107-WBN-01 was written to obtain the status of the procedures being revised. |R1

Interviews with Respiratory Protection Supervisors at SQN and BFN revealed that fittings on the hookup lines and manifold for breathing air, demineralized water, and contaminated drains are not unique, however, several precautions are performed prior to and during use to prevent wrong hookups such as hold orders, HP verification and tagging. Hoses are clearly marked "Breathing Air Only." No incidents associated with wrong hookups have occurred to date at WBN, SQN, or BFN. |R1

Conclusion

The issue was factually accurate at WBN, SQN, and BFN however, BFN and SQN precautions are taken to ensure this is not a problem. Corrective action was taken for the problem at WBN before the employee concerns evaluation of the issue was undertaken. |R1

4.0 COLLECTIVE SIGNIFICANCE

A collective assessment of the element-level findings (Section 3.0) led to the identification of two subcategory-level findings, one at WBN and one at SQN. These findings were determined to reflect adversely on management effectiveness at these two sites and dealt with ALARA and with management accountability as follows:

- (a) During the initial design of WBN, there was a lack of corporate guidance and design input criteria with respect to ALARA considerations.
- (b) There is a lack of management accountability at SQN with respect to the extent QA record requirements should be applied to RWP timesheets.

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4.1 Insufficient Attention to ALARA Considerations (WBN)

With respect to the first finding, Design Change Requests have had to be initiated to move process instrumentation and valves in order to locate them out of potentially high radiation areas. Barricades or other engineering controls have also had to be added to prevent access into potentially high radiation areas. Also, an ALARA Engineering walkdown of Unit 1 performed by WBN QA resulted in 182 ALARA deficiencies being identified. All of these findings seem to point to a lack of understanding of ALARA regulatory requirements during initial design. This subcategory level finding regarding ALARA is similar to the subcategory level finding presented in Subcategory Report 30500, "Accessibility." In that report, it is stated that there has been a lack of corporate control over initial design activities and over modification activities relative to accessibility consideration for equipment operation and maintenance and for ALARA situations.

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4.2 Lack of Management Accountability (SQN)

With respect to the second finding, there is a lack of clear definition of QA record requirements for RWP timesheets at SQN. Personnel are trained in GET that RWP timesheets must be treated as QA records. However, this evaluation found instances where personnel in the field do not handle RWPs in accordance with QA record requirements and it is endorsed by line management. Management is not being held accountable for deciding proper policy and for enforcing it. Also, personnel are being given training which conflicts with what they see put into actual practice. This negative reinforcement of training could be sending a subtle message to employees that training is primarily a formality conducted to meet requirements and does not necessarily reflect actual work practice. Such an attitude could lead to repeated poor work practices.

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## 5.0 ROOT CAUSE, PRELIMINARY ANALYSIS

Sections 3.0 and 4.0 discussed the specific findings for each of the element evaluations of this subcategory and their collective significance. This section presents the results of an independent review and analysis done on these specific element-level findings to identify the most frequently occurring and widespread root causes at the subcategory level. Patterns of recurring findings called symptoms were derived from the elements. These symptoms were tested for root causes, and the root causes for all elements were then analyzed collectively to identify which occurred most frequently and at the most sites. Details of the symptom and root causes derived for each element are presented in Attachment D, "Summary of Symptoms and Root Causes."

|R1

The review and analysis of these symptoms and root causes taken collectively pointed to three significant root causes for the subcategory:

- Various HP procedures were incomplete or fail to incorporate all technical requirements (WBN, SQN, BFN).
- There have been errors in judgement made by qualified individuals (WBN, SQN, BFN).
- There have been inadequate prerequisites defined to ensure satisfactory completion of various tasks related to HP (WBN, SQN, and BFN).

These three root causes derived from root cause analysis are supported by various element-level findings at WBN, SQN, and BFN. The first root cause is supported by the inadequacy of ALARA considerations in procedures for reviewing initial design at WBN. For the second root cause, evaluations of training experience for individuals at each of the three sites were not being submitted by POTC to the Office Training Committee, and the QA audit at SQN was performed against Reg. Guide 8.8. With respect to the third root cause, no prerequisites were in place for any of the three sites to ensure training evaluations that allowed individuals to be hired with previous experience without having OJT at a plant that had achieved power operation, and the QA audit task at SQN had incorrect prerequisites.

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6.0 CORRECTIVE ACTION

6.1 Corrective Action at Element Level

WBN

A CATD (OP 31100-WBN-01) was issued to WBN line management regarding disjointed paragraphs and missing text from the WBN FSAR. An applicable response to this CATD received from WBN line management was as follows:

"The individual resolution of immediate action for 1-00311 will be accomplished by Final Safety Analysis Report (FSAR) revision which will be submitted to the Nuclear Regulatory Commission (NRC) by March 16, 1987. Numerous inaccuracies in the Watts Bar FSAR have been documented under Significant Condition Report (SCR) GEN NEB 8602 and will be generically resolved by a comprehensive FSAR verification plan. The objective of the FSAR verification is both an updating to achieve accuracy and the development of an interface with the change control programs for design and operations. This will provide for the maintenance of FSAR accuracy. That plan is part of the Design Baseline and Licensing Verification Program which is clearly identified on the Watts Bar Integrated Schedule and is a prerequisite to fuel loading."

6.1.1 Element 311.01 - Health Physics Staff Training

WBN

One CATD (OP 31101-WBN-01) was issued to WBN line management to identify the failure of the HP Department of not returning biennial feedback questionnaires supplied by POTC in accordance with applicable procedures.

WBN line management responded to the CATD in the following manner:

"No Corrective Action required. Feedback forms deleted from TCT-12 revision of October 1986. 1985 Feedback forms were not submitted because Watts Bar had no trainees in 1985."

Concurrence with this CAP was based on a review of TCT-12 on October 27, 1986. This review determined that the evaluations of training by supervisors was not deleted. The evaluation method and process was revised which deleted the feedback form and instituted the requirement for a Training Evaluation Report. This revision also limited evaluation to those sites to which trainees are assigned.



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**SQL**

One CATD (31101-SQN-01) identifying deficiencies in the resolution of feedback questionnaires was issued to SQN. The acceptable response to this CATD received from SQN line management was as follows:

"No further action required based upon recent revisions to applicable instructions as follows: Health Physics Training (Non-GET) Procedure 0202.12 R2, 3/86; Division of Nuclear Training Standard Practice TCT 12, 10/86; C, HP and Safety Training Section Instruction Letter T6, R2, 3/86."

In the response, an example of a recent evaluation report of HP technicians' job performance was provided. The report showed that the in-plant phase of training and impact of retraining requirements is being adequately addressed.

**BFN (NPS)**

A CATD (31101-NPS-01) was issued to POTC based on the BFN evaluation identifying that the requirement for the Office Training Committee to review and approve a bypass of the basic phase of training was not being implemented.

The acceptance response to this CATD received from BFN line management was as follows:

"The objective of PMP 0202.12 is to produce and maintain technically competent health physics technicians, including technicians qualified in accordance with ANSI N18.1-1971. Personnel hired into TVA as fully ANSI-qualified by definition meet requirements. ANSI N18.1 requires that technicians in responsible positions have two years of experience in their specialty. In addition, one year of related technical training is suggested but not required. The TVA training program is an internal program designed for individuals who will eventually become ANSI-qualified but does not apply to individuals hired from outside TVA who are already fully ANSI-qualified.

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"Thus, we do not interpret PMP 0202.12 to require training waivers for such individuals. PMP 0202.12 does require approval of waivers allowing credit for trainees for certain portions of the training program. Thus, no specific corrective action is required.

"However, corporate Radiological Control (RADCON) is preparing, in coordination with site RADCON organizations and the Division of Nuclear Training (DNS), standards on selection, qualification, and training of RADCON personnel within the Office of Nuclear Power (ONP). These standards will be developed and issued by June 30, 1987, contingent upon the ONP procedure system allowing their approval and issuance. These standards will specifically address the issue raised by the concern and will remove any residual ambiguity in interpretation of requirements for education, training, and experience for health physics technicians. PMP 0202.12 is being reviewed in conjunction with development of the standards and will be revised as necessary to be consistent with the standards."

6.1.2 Element 311.02 - Radioactive Material Control

No corrective action was required for this element since the concerns were not substantiated.

6.1.3 Element 311.03 - Exposure Limits and Records

SQL

A CATD (31103-SQN-01) was issued to SQN line management concerning the handling of RWP timesheets and correcting QA documents. Part of the acceptable response to this CATD received from SQN line management was as follows:

"The QA record requirements for RWP timesheets are disseminated to all personnel utilizing the timesheets via the General Employee Training (GET) course GET-002.2, Level II Health Physics Training. During the practical factors portion of the class, all personnel must utilize the RWP timesheet and are evaluated on proper timesheet sign-in and sign-out. They are also instructed in the required method for making corrections to a QA document."

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Health Physics management response regarding RWP timesheet requirements are included in the SQN response to the CATD issued for 311.04.

6.1.4 Element 311.04 - HP Policy, Practices and Management Control

SQN

A CATD (31104-SQN-01) was issued to SQN line management in conjunction with the 311.03 element report. The CATD covers the case of RWP's not being handled as a QA document in the field and RIR's not coming to the attention of HP Supervisors or SQN operations management. The acceptable responses to this CATD and the CATD issued for 311.03 regarding RWP timesheet requirements, received from SQN line management, were as follows:

"Pertinent procedures have been revised to reflect the current status of determining/classifying RWP-timesheets as QA or non-QA; however, all RWP-timesheets are retained as lifetime records.

"AI-7 Revision 39 incorporated information in Attachment 2 beside Radiation Work Permit Timesheets that said "(only when used for dose history records)." Date of Rev. 7-14-86. Note: Revision 40 dated 8/8/86 and Revision 41 dated 10/9/86 did not change this information.

"RCI-14 Revision 5 dated 5/1/86 under Section III.0 states: "The RWP is a QA record when completed and authenticated by signature and date of the HP Shift Supervisor." Also Section V.A.5 states that "RWP Timesheets used for assessment of MPC hours and noble gas skin dose are QA documents." Section VII Quality Assurance (QA) restates and emphasizes the above QA records.

"ASIL-4 Revision 11 dated 5/29/86 added a clarification to Table I "QA Records Lifetime Retention Period" which stated beside the RWP timesheets: "(per AI-7)." But this is under the column titled "Record Title."

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HPSIL-7 Revision 15 dated 5/15/86 states:

"IV. QUALITY ASSURANCE

- A. "Completed Radiation Work Permits (RWP's) and RWP Timesheets used to track airborne exposure (MPC hours and skin exposure) are QA documents and are to be handled in accordance with requirements of ASIL-4 and AI-7.
- B. "All RWP Timesheets are not QA documents. To ensure that those timesheets that are used to track airborne exposures are identified as QA documents, they will be stamped as "QA Records" prior to being sent to the Data Processors.
- C. "All QA documents will be listed and transferred utilizing a QA document/record transmittal sheet.

"Recommendation to distribute RIR summaries to HP staff has been incorporated (first communications mailed for review 9/29/86) and will be issued each quarter. In the future the summary sheet will be mailed to the plant manager as a possible agenda item for his weekly meeting."

6.1.5 Element 311.05 - ALARA

WBN

Six CATD's were sent to WBN line management regarding the status and schedule for modifications to the SG platforms, removal of a panel from a high radiation area, implementation of an ECN which will provide more reliable equipment in a high radiation area, installation of T-bar barricades, new interfacing of SIS accumulator instrumentation, and the disposition of each deficiency identified in an ALARA walkdown.

WBN line management's response to the CATD (OP 31105-WBN-01) issued in regard to tracking the modifications to the SG platforms was as follows:

"Closure of ECN 6115 will adequately address the concern in ECSP Report Number 311.05-WBN."

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In response to the CATD (OP 31105-WBN-02) requesting status and schedule for the relocation of Panel O-L-14 from a potentially high radiation area, WBN's line management replied with the following:

"The following represents the status of relocation of PNL-O-L-14:

1. RAD CON will submit a DCR for relocation of PNL-O-L-14.
2. Change Control Board will review DCR upon submittal.
3. Upon approval by the Change Control Board, the DCR will be forwarded to DNE for design changes per ECN.
4. Plant will implement ECN.

The tracking document which should be used is the DCR. In order to minimize future similar occurrences, RAD CON performs ALARA reviews of all designs and modifications per AI-2.75 and AI-8.10."

The response from WBN line management in regard to the placement of more reliable equipment to reduce exposure during calibration/maintenance activities (CATD OP 31105-WBN-03) was as follows:

"Closure of ECN 6005 will adequately address the concern in ECSP Report Number 311.05-WBN."

The acceptable response to the CATD (OP 31105-WBN-04) from WBN line management with respect to the status schedule for the installation of T-Bar barricades on return air duct penetrations for the regenerative heat exchanger was as follows:

"The following represents the status schedule for installation of T-Bars on return air duct penetrations for regenerative heat exchanger:

1. RAD CON to submit DCR to install T-Bar or equivalent barricade at penetration to regenerative letdown HX room, units 1 and 2.

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2. DCR to be submitted for approval by 2-19-87.
3. This condition is limited in scope to the regenerative letdown HX cubicle, therefore a generic evaluation will not be necessary."

In response to the CATD (OP 31105-WBN-05) issued in regard to tracking the new interfacing of SIS accumulation instrumentation, WBN line management replied with the following:

"Closure of DCR 633 will adequately address the concern in ECSP Report Number 311.05-WBN."

The acceptable response from WBN line management to the CATD (OP 31105-WBN-06) regarding the tracking of the closure of the disposition of each deficiency in the ALARA walkdown was as follows:

"Closure of NRC Deviation 390/85-33-01 and CCTS No. NCO-85-0257-009 will adequately address the concern in ECSP Report Number 311.05-WBN."

SQL

SQL line management was issued four CATDs (31105-SQN-01, 02, 03, 04) based on the findings of NQA&E Branch Reports concerning the ALARA suggestion program, annual ALARA reports, ALARA program preplanning report requirements, and radiological safety-related activities documentation. Although SQL did not issue a corrective action plan specific to the CATD's, they did provide their response to the QA audit which was considered an acceptable response. Their response was as follows:

"NUCLEAR QUALITY AUDIT AND EVALUATION BRANCH  
REPORT  
NO. QSS-A-86-0022

Deviation No. QSS-A-86-0022-D02

The SQL ALARA suggestion program is not being implemented in accordance with standard practice SQN-145.

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"Deviation Details

- A. Only one of four ALARA suggestions submitted in 1986 has been responded to. The remaining three (submitted in February, May, and June) remain incomplete.

SQL-145, "As Low As Reasonably Achievable (ALARA) Suggestion Program," Revision 0, Section III states, "...the ALARA engineer will evaluate the suggestion and should provide a written response within two weeks..."

"SQL Response to QSS-A-86-0022-D02

SQL agrees with the deviation. Deviation detail A states that the deviation was the result of failure to provide a written response for the ALARA suggestions within a two week time period. Experience indicates some ALARA suggestions require significant investigation before an adequate response can be given. Therefore, SQL-145 was revised on August 14, 1986, the day of the audit finding, to remove reference to response time limitations. Even though the response time limitations have been removed from SQL-145, the ALARA staff will make every effort to respond to the suggestions in a timely manner.

"Deviation Details

- B. SQL-145, Attachment 1 is not being used to document the response as required.

SQL-145, Section III also states, "...the response will be recorded on Part B of the ALARA suggestion form..." (the suggestion form is Attachment 1).

"Response

SQL agrees with the deviation. In this particular case, the suggestion response was made on a separate sheet due to inadequate space for a proper response on Attachment 1.

This has been an approved method for response in the past. In the event additional space is required for an adequate response, Attachment 1 of SQL-145 will be labeled "see attached sheet." As of August 22, 1986, all 1986 ALARA suggestions received contain a properly documented response as required by SQL-145.

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"Deviation No. QSS-A-86-0022-D03

Contrary to the Radiation Protection Plan (RPP), SQN Annual ALARA Reports are not being submitted to the Manager of Nuclear Power within 90 days after the beginning of the new calendar year.

"Deviation Details

- A. Site QA staff in survey 9-85-P-007 (September 13, 1985) identified that the annual ALARA reports for 1983 and 1984 were submitted after the 90-day limit.
- B. The 1985 report was also submitted late.

Radiation Protection Plan, Revision 2 states in Section 4.5:

Each site director shall submit an annual ALARA report...within 90 days after the beginning of the new calendar year...

"Response

SQN agrees with this deviation. For the purpose of this audit, no response is provided in reference to the 1983 and 1984 annual ALARA reports since they were addressed as a result of survey 9-85-P-007.

The 1985 Annual ALARA Report was initially prepared in early March 1986 and submitted to the plant manager for review in mid-March. The plant manager requested a format change for the report which resulted in further delay. The final report was submitted to the plant manager on March 28, 1986, for approval. The RIM's tracking number was assigned on April 2, 1986; however, the report was not submitted to the manager of the Office of Nuclear Power until April 7, 1986. To reduce the possibility of further deviations in this area, HPSIL-25 was revised on March 10, 1986, to require submittal of the Annual ALARA Report from the Radiological Control Section to the Site Director within 60 days after the beginning of the new calendar year. This commitment should allow ample time for management review and approval to meet the April 1 deadline.



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"Deviation No. QSS-A-86-0022-D04

SQN's ALARA program does not incorporate all the requirements of Regulatory Guide 8.8.

"Deviation Details

- A. When plant groups exceed ALARA goals, no corrective action is documented. Currently there are six groups in excess of their goal. No documentation of the reason or any corrective action taken was available for review by the audit team.

Regulatory Guide 8.8-1978, Section C.1.b.1.c states that "Corrective actions are taken when attainment of the specific objectives appear to be jeopardized."

"Response

SQN disagrees with the deviation. Regulatory Guide 8.8 is a SQN reference document as defined in the Radiation Protection Plan, Rev. 3, and as such no commitments have been made concerning the entire implementation of this document.

Standard Practice SQA-129 establishes performance goals for the site and for individual plant groups. Performance against these goals is reviewed by the managers on a monthly basis using the Plant Performance Report. Additionally, a meeting is held at the end of the fiscal year to review the overall performance. A meeting was held with the plant managers on October 28, 1986. One of the activity items resulting from that meeting was a request to the Health Physics supervisor to provide a summary report on work activities that had resulted in unanticipated exposures.

"Deviation Details

- B. SQN's RCI-10 does not include Regulatory Guide 8.8 requirements for decontamination, lighting, prejob briefing, or review of previous jobs as a part of the prejob report.

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Regulatory Guide 8.8, Section C.3.a states that,  
"...Preparations and plans should reflect the  
following considerations:

- (5) ..decontamination...
- (6) ..preoperational briefing...
- (13)..auxiliary lighting..."

"Response

SNQ disagrees with the deviation. Regulatory Guide 8.8 is a SNQ reference document as defined in the Radiation Protection Plan, Revision 3, and is not required for full implementation.

RCI-10, Section IV, states that the responsible work supervisor shall ensure that all workers are briefed on the work, procedure, RWP protective requirements and special instructions, radiological conditions, and ALARA considerations prior to the start of the work. RCI-10, Attachment 1, provides a flow chart for use in completing an ALARA Planning Report (APR). Included in the flow chart is the block to "Brief Workers." RCI-10, Section IV also states that "ALARA" considerations which have been proven effective for repetitive tasks should be incorporated into the controlling procedures."

The Radiological Control Branch will issue specific guidance regarding the application of ALARA considerations for work activities. While SNQ believes that our present ALARA planning is achieving its purposes, any further detailed criteria issued by Radiological Control will be implemented when it is issued.

"Deviation No. QSS-A-86-0022-D05

SNQ is not maintaining documentation of radiological safety-related activities as required by American Nuclear Insurers (ANI).

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"Deviation Details

RWP timesheets and ALARA planning reports are not maintained as QA records. ANI/MAELU Information Bulletin 80-1A, "Records Retention and Documentation of Radiological Safety-Related Practices" (L99 821201 001) states in Section VIII, titled "Work Assignments (Radiation Work Permits)":

...It is the intent of this section to set forth the records which are necessary to establish where and when an individual was working in a radiation controlled area, what he was doing there, the radiological environment in which he was working, the radiological controls and evaluations where they were applied to his working in a radiation controlled area, and any special requirements or conditions which may have existed at the time. Additionally, the records must show that proper authorization and control of an individual's radiation exposure was exercised by responsible plant management individuals.

"Response

SQN disagrees with the deviation. ANI/MAELU Information Bulletin 80-1A is an information notice and not a requirement referenced in any SQN procedure. Telephone conversation with ANI personnel further concludes that maintaining RWP timesheets and ALARA planning reports as lifetime records is a recommendation and whether or not they are designated as "QA" records is immaterial. It should be noted that standard practice at SQN is to maintain all dose-related records including RWP's and ALARA planning reports for lifetime of the plant."

BFN

Two CATDs were issued to BFN line management. One CATD (31105-BFN-001) identified the lack of a formalized ALARA suggestion tracking system. The acceptable response to this first CATD received from BFN line management was as follows:

"A computerized tracking system has been developed to identify the status of each ALARA suggestion. However, procedure development and personnel training will be completed by the end of January 1987.

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Existing ALARA suggestion information will be loaded into the program by the end of March 1987. The new ALARA suggestion tracking system will be fully operational by April 1, 1987."

The other CATD (31105-BFN-002) identified problems associated with Electrical Maintenance's correspondence control. The acceptable response to this second CATD received from BFN line management was as follows:

- "1. Electrical Technical Section responded to the one ALARA suggestion identified as requiring a response.
2. Electrical Technical Section has already implemented a tracking system for items requiring response. Items requiring response are given an assignment number, assignment date, due date, and description (which includes references). This information along with initials of the responsible engineer are entered into the computer program tracking log. A printout is generated each month. The printout is reviewed and updated throughout the month by the section supervisor.
3. Refer to memorandum from T. F. Ziegler to A. W. Sorrell dated November 24, 1986, "Browns Ferry Nuclear Plant - ALARA Suggestion for Relocating Drywell Control Air Filter Blowdown Valve - CATD No. 31105-BFN-002 (R39 061124 892)."

6.1.6 Element 311.06 - HP Facilities, Clothing, and Protective Equipment

SQL

One CATD (31106-SQN-001) was issued to SQL line management concerning the number of damaged C-zone clothing articles issued for reuse which reflects on the lack of attention given to their maintenance and serviceability. The acceptable response to the CATD received from SQL line management was as follows:

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"As described in reference 8 (memorandum from R. Prince to P. R. Wallace, "SQN-Employee Exit Interview Concerns" 8-11-86), the responsibility for ensuring the workers do not wear torn or damaged protective clothing lies with each individual. In any event, the Radiological Control Group has recently taken over the operation of the laundry. This will allow for tighter controls to be established at the working level.

"On November 6, 1986, a random inspection of 50 C-zone coveralls was performed. Two of these coveralls were found to have small (half inch) holes in them. Again, even though these coveralls are inspected by laundry personnel during the laundering cycle a small percentage will still get through, which is why workers must inspect the clothing themselves. A large number of C-zone clothing (principally white coveralls) was recently disposed of for this and other reasons. I believe this action eliminated a major portion of the torn articles and should resolve this issue."

6.1.7 Element 311.07 - Radioactive Effluents/Uncontrolled Areas

WBN

One CATD (31107-WBN-01) was issued to WBN line management over the current status for updating procedures which includes requirements for manifold installation, hold orders and designated air lines. The acceptable response to this CATD from WBN line management was as follows:

"Historical Problem Description and Proposed Solution

Problem:

Possibility of using contaminated hoses for connecting MSA Breathing Air Manifolds to Service Air.

Previously Proposed Solution

Physical Changes:

1. Use designated air lines for MSA Breathing Air Manifolds.

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2. Change MSA Breathing Air Manifold input couplings from Chicago type to a different type, unique within the plant.
3. Use an adapter, Chicago type to a different type, to connect from Service Air to inlet hose for MSA Breathing Air Manifolds.

Administrative Changes:

1. Revise RCI-4 and HP-TSIL-19.
2. Have HP certify manifold installation.
3. Put a hold order on Service Air valves being used for breathing air manifolds.
4. Have HP control air lines for breathing air manifolds.
5. Have HP control the adapter.

"Current Plant Situation

WBN is a preoperational power plant. At present, there is no possibility of radioactive fission and/or corrosion product contamination of Service Air, Service Air valves, or air lines. Fuel load is estimated to be at least two years' away.

"Necessary Action

Corrective action to preclude the use of contaminated air hoses for connecting the MSA Breathing Air Manifolds to Service Air are warranted and must be in place prior to initial criticality. Until then, there is no hazard.

Upon further investigation of the previously proposed corrective action, WBN Radiological Control (Rad Con) has concluded that a slight modification of the previously proposed solution will provide acceptable corrective action. Specifically, WBN Rad Con concludes that an adapter from Service Air to the inlet hose of the MSA Breathing Air Manifold is unnecessary. WBN Rad Con plans to use special designated air lines under the control of Rad Con to connect Service Air to MSA Breathing Air Manifolds. These air lines would have a Chicago-type

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fitting on one end (for connection to Service Air) and a different type fitting on the other end (for connection to the MSA Breathing Air Manifold). The air lines would also be identified with a special sleeving material, which has been secured for this purpose. The type of fitting to be used on the MSA Breathing Air Manifold has not been settled. Discussions are underway with MSA at this time. If the solution can be used, no adapter is necessary to ensure that an uncontaminated air line will be used.

Administratively, HP-TSIL-19 and RCI-4 will require revision and are scheduled for the second and third quarter of 1987 respectively. Because corrective action does not require immediate implementation, we propose to maintain the present schedule for instruction review/rewrite. When revised, the instructions will reflect RAD CON control of designated air lines for MSA Breathing Air Manifolds which are identifiable by special sleeving and a unique fitting on one end. The MSA Breathing Air Manifold will be changed accordingly. Additionally, RAD CON personnel will certify correct installation prior to use of the MSA Breathing Air Manifold. To prevent the inadvertent disconnection of a MSA Breathing Air Manifold from Service Air, RCI-4 will also stipulate that a hold order be placed on Service Air valves in use for supplying air to the manifolds.

"Completion Dates

Assuming changing the coupling on the MSA Breathing Air Manifold is permissible and a suitable coupling is obtained before April 30, 1987, HP-TSIL-19 and RCI-4 will be revised before September 30, 1987. At this point, all action should be completed."

6.2 Corrective Action at Subcategory Level

CATD 30500-NPS-03 being sent to TVA corporate management under Report 30500, "Accessibility," adequately addresses the first finding of this subcategory as presented in section 4.0 of this report, i.e., lack of corporate guidance and design input criteria with respect to ALARA consideration. The problem of management accountability as cited in the second subcategory-level finding is discussed in the Operation Category Report as one of the root causes found throughout the category's major findings. Because of this higher-level treatment of the topic of management accountability, no subcategory-level CATD is being issued under this report.

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7.0 ATTACHMENTS

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Attachment A - Subcategory Summary Table

Attachment B - Listing of Concerns by Element/Issue

Attachment C - Checklist for Root Cause Analysis

Attachment D - Summary of Symptoms and Root Causes

Attachment E - Graph of Symptoms Versus Root Cause

Attachment F - Bar Charts of Symptoms

Attachment G - Bar Charts of Root Causes

Attachment H - CATDs

Attachment I - List of Evaluators by Element/Plant

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