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7.2 Corrective Action Required As A Result of this Evaluation

7.2.1 Damage to Concrete/Rebar

7.2.1.1 Plant-Specific

7.2.1.1.1 Sequoyah Nuclear Plant

CATD C011305-SQN-02. Review 10 CFR 50, Appendix B, Criteria XVII to determine if violations exist with respect to color-coded rebar sketches (IZ-11-8-76-0 thru -16) potentially being a QA record out not being retrievable.

The line management response as detailed in CATD No. C011305-SQN-02 was that the referenced sketches were not considered QA records nor documentation. Rather, they were considered field information and processed as such.

Additional evaluation was performed subsequent to the line response on the subject sketches. Conversations with DNE civil engineers revealed the areas detailed by the sketches to be "low stress" areas where a minimal amount of rebar was actually required. The intent of the sketches was to serve as a guide for areas where "blanket approval" would be given to cut rebar. DNE defined the sketches as color-coded drawings issued to facilitate construction only and were not intended to serve as life-of-plant (LOP) type documentation. However, these comments do not preclude SQN from maintaining records which would allow evaluation of the cumulative effects of rebar cut in specified areas. This subject is being addressed from a generic standpoint by the Engineering Category, SQN Element Report Nos. 215.2(B) and 215.6(B).

7.2.1.2 Generic

None

7.2.2 Testing of Anchors

7.2.2.1 Plant-Specific

7.2.2.1.1 Watts Bar Nuclear Plant

CATD 11300-WBN-05. The disposition of NCR 3747R was misincorporated into WBN-QCP-1.14.

The line management response stated that the performance of the disposition and the subsequent closure of NCR W-519-P will resolve this deficiency.

CATD 11300-WBN-03. NCR 6674 was written by the Electrical Engineering Unit to identify misincorporation of NCR 3747R into WBN-QCP-1.14. This NCR did not address the requirement for additional inspections if more than three anchors for each successive group of 50 anchors fail the proof load test. Furthermore, the disposition of NCR 6674 required a list of affected lot numbers to be with the NCR at closure. This was not done. NCR 6674 is also included in the scope of SCR 6649-S. This SCR must remain open until the discrepancies with NCR 6674 are resolved.

The line management response stated that NCR 6674 would be revised to include a list of affected lot numbers and to show a failure rate of less than one out of 50 anchors.

7.2.2.1.2 Sequoyah Nuclear Plant

CATD C011306-SQN-1. Review of SQN-M&AI 10 to determine if specific requirements should be implemented to: (1) require pull tests to be performed prior to base

plate installation (2) require shimming of the base plate when "through-the-plate" proof tests are performed.

The line management response as detailed in CATD Number C011306-SQN-01 was that the issue of pull testing through baseplates did not represent a CAQ. The issue will be addressed further in a revision to MAI-10.

In addition, the issue of anchor overtightening was considered not to be a problem. A revision to G-32 which will clarify tightening requirements for SSDs will be incorporated into MAI-10.

Note: The WBN-ECTG agrees that the overtightening issue is not a restart item requiring immediate attention by SQN. However, further evaluation has revealed a programmatic problem exists at all sites on this issue. This has been discussed with DNE-CEB Central Staff personnel who have agreed to review and evaluate potential deficiencies on this subject. The additional evaluation done for this problem has resulted in the suitability for service of all TVA nuclear plants being indeterminate.

CATD C011305-SQN-1. Perform detailed review of M&AI 10 to insure all applicable G-32 anchor installation/inspection criteria has been implemented.

The line management response stated that a detailed review of M&AI-10 was performed and I.C. 86-893 was incorporated on August 1, 1986. As stated in the report, instructions are subject to revision on a continuing basis as requirements are changed, but no less than every two years.

CATD C011305-SQN-3. Review drawings listed below to insure revision is made to preclude the use of leveling nuts as required:

47A056-40, 47A056-40A, 48N707-26,  
I-H47-282, 47A050-4, and 47A053-151.

The line management response stated that drawing 47A050-4 was revised June 3, 1986. This drawing provides information used to install support base plates in the areas discussed; therefore no additional revisions are required. This was coordinated with S. K. Cook, Division of Nuclear Engineering, SQN.

ECTG - Construction Category Response

WBN-ECTG agrees with the CAP response C011035-SQN-03 concerning the revision to drawing 47A050-4. It was determined, after additional review of drawings and discussions with SQN DNE Engineers, that the other affected drawings had not been revised. These drawings are 47A056-40, 47A056-40A, 48N707-26, I-H47-282 and 47A053-151

As a minimum, these drawings should be reviewed to determine if additional revision is required with regard to precluding the use of leveling nuts.

7.2.2.1.3 Browns Ferry Nuclear Plant

CATD 11300-BFN-03. Corrective Action Report (CAR) BFN-CAR-85-058 was written to identify a generic problem with concrete anchors. The CAR corrective action was to perform a sample on 1/4-inch through 7/8-inch diameter anchors. However, no 7/8-inch diameter anchors were included in the sample.

The line management response was inclusion of 7/8-inch diameter anchors and subsequent completion of sampling program BFEP20431 and BFN-CAR-85-058 would adequately address this issue.

CATD 11300-BFN-04. The parameters of NRC OIE Bulletin 79-02 have not been fully addressed. Performance and completion of work described by BFEP-PI 86-05 and SMMI 5.1-A are required to answer the requirements set forth by the bulletin.

The line management response was that the 79-02 program described in BFEP PI 86-05 and SMMI 5.1A is currently being implemented and completion is scheduled in accordance with commitments defined in the BFN Nuclear Performance Plan, Volume 3. The current schedule does not require completion of the program before unit 2 restart.

CATD 11300-BFN-05. No SMMI/MMI has been initiated by the site to detail the inspection and acceptance parameters (inspection/acceptance criteria, independent (QC) verification, etc) of the sample program detailed by BFEP-PI 86-29.

The line management response was that due to the results of the preliminary small bore piping sample program, BFEP-PI 86-29 will be canceled, and 100 percent inspection program per BFEP-PI 87-40 will be performed. BFEP-PI 87-40 and a two-way memorandum (R23 870512 950) detail inspection and independent (QC) verification requirements and concurrence. Therefore, the description on this CATD Item 6 no longer represents a problem, and no SMMI/MMI is required for the sample program. | R2

#### 7.2.2.2 Generic

CATD C011306-NPS-01. General Construction Specification G-32 does not contain specific criteria which requires (1) pull tests to be performed before baseplate installation (2) the baseplate to be shimmed when through-the-plate proof tests are performed. Since G-32 and various plant-specific procedures do not contain this

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criteria, methodology is required to verify that anchor shell are not contacting the back of baseplates for installations where through-the-plate proof tests have been performed since completion of 79-02 inspections.

The DNE response was that G-32 would be revised to provide alternate procedure for proof loading of SSDs through the baseplate. The alternate procedure will include requirements for shimming the baseplate, checking for contact of the shell with the plate and recommendations for performing testing before baseplate installation.

In addition, DNQA will perform a review of site procedures/instructions to assure that, since the completion of 79-02 verification, programs adequately addressed proof loading of SSDs through baseplates. This review will be completed by June 22, 1987, and any discrepancies noted will be documented in accordance with the CAQR program.

The DNQA response was that the Technical Support Branch has performed a review of site procedures/instructions for criteria relating to proof loading of expansion anchors (self-drilling type) through base plates. The following site procedures/instructions, with applicable revision and date of incorporation, for Bellefonte - QCP 2.8 Revision 11, November 11, 1983, Sequoyah - MAI Number 10 Revision 12, January 19, 1987; and Watts Bar - QCP 1.14 Revision 9, January 1, 1982, were revised to contain acceptance criteria for subject problem area identified by IE Bulletin 79-02 dated March 8, 1979. Browns Ferry - MAI Number 4 has been revised to address subject problem area and is currently in review process. Interviews with site personnel (Bellefonte Nuclear Plant, Browns Ferry Nuclear Plant, Sequoyah Nuclear Plant, Watts Bar Nuclear Plant) indicate no proof load tests through base plates has been performed prior to procedures/instructions being revised.

R2

Per conversation with Marvin Cones, DNE, on July 13, 1987, General Construction Specification Number 32 is in the process of being revised to include requirements for proof loading of expansion anchors through base plates.

As a result of a problem area having been identified, measures have been taken to assure that anchors were proof loaded in an acceptable manner while General Construction Specification Number 32 contained no specific criteria addressing subject problem area.

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7.2.3 Anchors Cut Off

7.2.3.1 Plant-Specific

7.2.3.1.1 Watts Bar Nuclear Plant

CATD 11300-WBN-02. Concrete bolt anchors designated as EA may not have had all required inspections performed.

The line management response stated that the performance of the disposition and the subsequent closure of NCR 6578 will resolve this deficiency.

CATD 11300-WBN-01. Discrepancies were identified during walkdown inspections of instrumentation lines for unit 1. These discrepancies are lost documentation and actual field configurations do not agree with the Installation Operation Sheets (IOS).

The line management responses stated that a 100 percent walkdown of all instrumentation lines for unit 1 is currently in progress per NCR W-334-P. This work is being performed by Mechanical Maintenance under work plan NW-334P-2.

CATD 11300-WBN-04. The NRC required TVA to perform a 100 percent review of all calculations associated with the 79-02 program at WBN. This will be done to provide complete assurance that the requirements of bulletin 79-02 are met.

The line management response stated that TVA committed to review 100 percent of the engineered pipe supports on safety-related piping systems in unit 1. This commitment will be completed prior to initial fuel load under the Hanger and Analysis Update Program.

7.2.3.1.2 Sequoyah Nuclear Plant

CATD C011305-SQN-04. Per work request (WR) 114789, two bolts for supports A0318R004 and A0508R005 were found damaged and require replacement.

Reference: SQN-FCR-4651, ECN-L6744 and NSRS Report I-86-120-SQN.

Proposed Corrective Action Plan: Closure of recommendation I-86-120-SQN-3 of NSRS report I-86-120-SQN.

CATD C01305-SQN-05. Per work request (WR) 114789, 19 anchors were identified with unacceptable plug depths (16 were unacceptable, 3 were questionable). These anchors require pull (proof) testing to verify anchor integrity.

Reference: NSRS Report I-86-120-SQN

Proposed Corrective Action Plan: Closure of recommendation I-86-120-SQN-2 of NSRS Report I-86-120-SQN.

CATD C011305-SQN-06. Per work request (WR) 114789, one anchor was identified as being undersize in support 1000HCAB749-A0519R015. This anchor to be replaced with a correctly sized anchor.

Reference: NSRS Investigation Report I-86-120-SQN.

Proposed Corrective Action Plan: Closure of recommendation I-86-120-SQN-5 of NSRS Report I-86-120-SQN.



7.2.3.1.3 Browns Ferry Nuclear Plant

CATD 11300-BFN-06. The concrete anchorages for the CRD and torus attached piping systems are being inspected under the BFEP-PI 86-05 program and SMMI 5.1-A. However, BFEP-PI 86-05 specifically excludes these two systems from the work covered by the PI.

The line response was that the data gathered for these programs was obtained by SMMI 5.1A under the scope initially defined for 79-02 which occurred before issuance of the program document BFEP PI 86-05. The groups responsible for resolution of the LTTIP and CRD system programs are responsible for the anchorage end product. BFEP PI 86-05 will be revised to provide a description of the situation.

CATD 11300-BFN-07. Browns Ferry Corrective Action Report (BF-CAR) 86-0214 was initiated to identify deficiencies in Walkdown instruction SMMI 5.1-A. This instruction was determined not to meet the requirements for equipment inspection and verification walkdowns. Therefore, the deficiencies identified must be resolved to ensure the acceptability of the inspections governed by SMMI 5.1-A, and to further ensure that the requirements of NRC OIE Bulletin 79-02 are met.

The line response was that implementation of the corrective action defined in the DNE response to BF-CAR-86-0214 would adequately address this issue. The estimated completion date of the corrective actions is June 15, 1987.

CATD 11300-BFN-08. No timeframe definitions are given in SMMI 5.1-A or BFEP-PI 86-05 with respect to what existing anchorages are being inspected



#### 7.2.4.2 Generic

CATD 11300-NPS-03. DNE should determine if preventive maintenance is lacking with respect to bolt anchors installed in high humidity and corrosive environments. Also, the generic significance of rusted/corroded concrete anchor bolts should be evaluated.

The DNE response was that CAQs and potential generic condition evaluations for WBN-NCR-6320 have adequately addressed the deficiency with respect to the current condition of bolts for expansion anchors at all nuclear sites. In addition, Construction Specification G-32 (or the engineering requirements specification under development to replace G-32) will include requirements for periodic inservice inspection of anchors subject to corrosion.

#### 7.2.5 Installation of Anchors

##### 7.2.5.1 Plant-Specific

###### 7.2.5.1.1 Browns Ferry Nuclear Plant

CATD 11300-BFN-01. Installation of wedge bolts adjacent to existing SSD anchors per drawing 48W1241-1 causes G-32 violations.

The line response was that drawing 48W1241-1 was a stand alone design output document. Details on the drawing do differ from G-32 requirements and this is acceptable and supported by design documentation. PIR-BFNCEB 8628 documented this concern and should be closed by June 1, 1987.

CATD 11300-BFN-02. Construction QC inspectors could have applied the minimum spacing criteria found in General Construction Specification G-32, Revision 5, without noting adjacent attachments that could influence expansion anchor spacing requirements.

The Proposed Corrective Action Plan provided by the line organization was that performance of disposition and subsequent closure of NCR GEN QAB 8203 Revision 2 will adequately address this issue.

7.2.5.2 Generic

CATD 11300-NPS-02. General Construction Specification G-32 is inadequate with respect to SSD bolt installation, inspection and tightening criteria. No engineering evaluation/laboratory test have been performed to determine the effects of overtightening on the bolt and/or anchor shell. Bolt anchor integrity cannot be verified. Also, training is inadequate as inconsistencies have been identified in bolt installation methodology used by craftsmen.

The response(s) were that the tightening requirements for SSD anchors provided in G-32 would be revised (revisions are included in proposed revision 12 to G-32). Additionally, a laboratory test program will be initiated to determine the effect of overtightening and plate gaps on the performance of self-drilling anchors. The results will be evaluated to determine if field tightening practices have degraded the performance of anchors. (This is not considered a CAQ at this time since no problem with anchor failure because overtightening has been identified over the many years of installation. The testing is needed because of the varying practices and the number of employee concerns.)

The Division of Nuclear Training (DNT) accepted responsibility for the corporate training aspects of CATD 11300-NPS-02.

DNT agrees with the need for training for craft personnel in the proper installation of anchor bolts. DNT will coordinate the development and implementation of either a corporate or site specific training program (whichever is appropriate) for craft personnel. This training will be available four months after the revision and issue of General Construction Specification G-32.

8.0 ATTACHMENTS

Attachment A - List of Concerns Indicating Safety Relationship and Generic Applicability.

Attachment B - List of Evaluators.

Attachment C - List of Concerns by Issue.

ATTACHMENT A  
LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY

CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B REPORT	QTC/NSRS INVESTIGATION R	P* S CONCERN DESCRIPTION	REFERENCE SECTION #
BFN IESC-85-01 T50036	CO	113	BFN	Y N N N K-FORM		SS DRAWINGS 48WR41-1 DETAILS E, F, AND G SHOW A 2-INCH BY 2-INCH WINDOW FOR LOCATING A REPLACEMENT ANCHOR NEXT TO AN EXISTING SSD ANCHOR. THIS REPLACEMENT COULD CAUSE THE REPLACEMENT WEDGE BOLT TO HAVE INSUFFICIENT EMBEDMENT.	3.1, 3.2.6.3, 3.3, 4.6.1, 4.6.2.3, 6.5, 7.2.5.1.1
BNPQCP10.35-3	CO	113	BLN	N Y N N K-FORM		SR TWO SPECIFIED EMPLOYEES CUT OFF A RED HEAD ANCHOR AND INSTALLED IT BEHIND HANGER BASE PLATE. DETAILS GIVEN.	3.1, 3.2.4.4, 3.3, 4.4.1, 4.4.2.4, 6.3.4, 7.1.3.1.1
H1-85-020-N02	CO	113	WBN	Y Y Y Y REPORT		SR NRC IDENTIFIED THE FOLLOWING CONCERN FROM REVIEW OF THE QTC FILE: "QUALITY READ ANCHOR INSTALLATIONS." PER REVIEW OF THE FILE, THIS CONCERN APPEARS TO DEAL WITH CRAFTSMEN CUTTING LEAD ANCHORS IN HALF WHEN THEY HIT REBAR AND MAKING THEM APPEAR THAT THEY ARE WEDGED IN THE HOLE.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3

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CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN 085-037-001 T50002	CO	113	WBN	Y Y Y Y	IN-85-037-001 REPORT	SR	IN SOME CASES WHERE CONCRETE ANCHORS HIT REBAR, THE ANCHORS WERE CUT OFF AND A BOLT-HEAD WAS WELDED TO BASE PLATE	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3
IN-85-055-002 T50066	CO	113	WBN	N N N Y	REPORT	SR	APPROX. 1980-1981, ELECTRICAL FOREMAN (NAME KNOWN) DIRECTED THE CRAFT UNDER HIS SUPERVISION TO CUT AND WELD ANCHOR BOLTS TO BACK OF BASE PLATES WHEN REBAR WAS HIT DRILLING THE ANCHOR BOLT HOLES. THIS OCCURRED IN THE AUX. BLDG., ELEV. 737', UNITS 1&2 ON CABLE TRAY AND CONDUIT SUPPORT INSTALLATIONS. CI DID NOT KNOW SUPPORT NUMBERS, CONDUIT OR TRAY NUMBERS.	3.1, 3.2.4.1, 3.3, 4.4.1, 4.4.2.1, 6.3.1, 7.1.3.1.1, 7.2.3.1.1

ATTACHMENT A  
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CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN-85-232-001 T50009	CO	113	WBN	N N N Y K-FORM		SR	PROCEDURE QC1-114(?) (INSTALLATION OF RED HEADS) REQUIRES AN NCR BE WRITTEN WHERE REBAR HAS BEEN DAMAGED DURING ANY DRILLING PROCESS, I.E. INSTALLING RED HEADS. ALMOST ALL NCR'S HAVE BEEN WRITTEN (LAST 3 YRS) BY CIVIL, YET P/M AND OTHER DISCIPLINES DRILL & COULD HAVE DAMAGED REBAR AT LEAST A FEW TIMES DURING THE LAST 3 YRS. QUESTIONS WHY MORE NCR'S AREN'T WRITTEN BY DISCIPLINES OTHER THAN CIVIL. PROCEDURE IS NOW IN FOR REVISION TO ALLOW UP TO 10 PERCENT OF THE DIAMETER TO BE DAMAGED BEFORE AN NCR IS WRITTEN.	3.1, 3.2.2.1, 3.3, 4.2.1, 4.2.2.1, 7.1.1.1.1
IN-85-246-003 T50156	CO	113	WBN	Y Y Y Y REPORT	1-85-528-WBN	SR	SEVERAL INSTANCES WERE IDENTIFIED THAT WHILE REMOVING VOIDED HANGERS OF RED-HEAD ANCHORS, ANCHORS WERE OBSERVED TO BE GROUND ON, CUT-OFF OR OTHERWISE MODIFIED. CI CONCERNED THAT THIS CONDITION COULD EXIST FOR HANGERS STILL INSTALLED. CI COULD NOT PROVIDE SPECIFIC NUMBERS OF VOIDED HANGERS. CI STATED THIS OCCURRED IN UNIT 2 SIDE AUXILIARY BUILDING, EVEL. 692' ON CEILING COLUMN A13-T LINE. CONSTRUCTION DEPT. CONCERN. NO FOLLOW UP REQUIRED.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3



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CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN-85-285-001 T50174	CO	113	WBN	Y Y Y Y K-FORM	I-85-656-WBN	SS	HANGER BASE PLATES INSTALLED IMPROPERLY. REBARS DRILLED THROUGH AND REDHEADS CUT OFF SHORT. BOLT AND HEADS CUT OFF AND WELDED TO BASE PLATE. ALL CRAFTS DID THIS. EXAMPLES ARE DUCT SUPPORTS-CEILING OF CONTROL ROOM (SPREAD ROOMS) 708' ELE - 5/8" REDHEADS. VARIOUS SIZE PLATES. 5-6 BOLTS CUT CLOSE TO COLUMNS AT EAST WALL. CI HAS NO FURTHER INFORMATION. CONST. DEPT. CONCERN. NO FOLLOW UP REQUIRED.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3
IN-85-285-002 T50176	CO	113	WBN	Y Y Y Y K-FORM	I-85-657-WBN	SS	TVA INSPECTED AND PULL TESTED REDHEADS IMPROPERLY: PULL TESTING WAS NOT 100%. BASE PLATE OR HANGER WAS BOLTED IN PLACE. EVEN REDHEADS THAT WERE LOOSE COULD HAVE PASSED BY BEARING AGAINST THE BACK OF THE PLATE. BECAUSE THE HOLES WERE NOT INSPECTED BEFORE REDHEADS WERE SET, QC COULD NOT TELL IF REBAR HAD BEEN CUT. CI HAD NO MORE INFORMATION. CONST. DEPT. CONCERN. NO FOLLOW UP REQUIRED.	3.1, 3.2.3, 3.3, 4.3, 6.2, 7.1.2, 7.2.2

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CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN-85-285-003 T50176	CO MP	113 706	WBN	N N N Y K-FORM	I-85-684-WBN	SR	<u>TVA MANAGERS (KNOWN) TOLD PERSONNEL TO CUT THROUGH REBAR WITH REDHEADS, CUT OFF REDHEAD SHIELDS AND TO CUT OFF BOLTS AND WELD THEM TO BASE PLATES WHERE REDHEADS COULD NOT BE PUT IN. MANAGEMENT WAS ONLY INTERESTED IN PRODUCTION, AND DID NOT LET WORKERS MOVE BASE PLATES IF REBAR WAS HIT. NO FOLLOW UP REQUIRED.</u>	3.1, 3.2.4.1, 3.3, 4.4.1, 4.4.2.1, 6.3.1, 7.1.3.1.1, 7.2.3.1.1
IN-85-339-001 T50039	CO MP	113 706	WBN	N N N Y K-FORM		SR	<u>INDIVIDUAL ORDERED BY FOREMAN (NAME KNOWN) TO VIOLATE PROCEDURE CONCERNING RED HEAD ANCHOR INSTALLATION WITH RESPECT TO REBAR INTERFERENCE. RED HEAD WAS CUT AND PLATE INSTALLED. LOCATION GIVEN WAS 708' IN THE ANNULUS AREA UNIT #2, FROM 713', SO DOWNSTAIRS TO 708, AT CONTAINMENT ENTRANCE TURN LEFT, GO 20', HANGER IS ON LEFT ON THE WALL. APPROXIMATE DATE OF OCCURRENCE IS MARCH-SEPTEMBER 1978.</u>	3.1., 3.2.4.1, 3.3, 4.4.1, 4.4.2.1, 6.3.1, 7.1.3.1.1, 7.2.3.1.1

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CATEGORY: CO CONSTRUCTION /SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN-85-339-003 T50039	CO IH MC	113 000 403	WBN	N N N Y K-FORM		SR	A FOREMAN, EMPLOYED AT WBNP FOR 4 YEARS (NAME KNOWN) WAS ALLEGED TO HAVE <u>ROUTINELY ORDERED CRAFT PERSONNEL UNDER HIS SUPERVISION TO VIOLATE PROCEDURE REQUIREMENTS, AND TO BYPASS INSPECTION HOLD POINTS RELATIVE TO ANCHOR PULL TESTS.</u> FOREMAN ALSO HAD A HABIT OF ROUTINELY UTILIZING SCRAP METAL IN SAFETY RELATED WORK (UNITS 1 & 2) AND OF EXTREME HARASSMENT OF CRAFT WHO QUESTIONED HIS ORDERS TO VIOLATE/ BYPASS PROCEDURE REQUIREMENTS. <u>TIME FRAME WAS 1978-1982.</u>	3.1, 3.2.3.1, 3.3, 4.3.1, 4.3.2.1, 6.2.1, 7.1.2.1.1, 7.2.2.1.1, 7.2.2.2
IN-85-339-004 T50039	CO IH QA	113 000 800	WBN	N N N Y K-FORM		SR	<u>FOREMAN (NAME KNOWN) ORDERED CREW, ON MULTIPLE OCCASIONS TO VIOLATE REQUIREMENT TO OBTAIN PULL TESTS ON ANCHOR INSTALLATIONS. MOST OCCURRED IN UNIT #2. SOME INSTANCES INVOLVED CONSPIRACY BETWEEN FOREMAN AND "LAZY" PERSONNEL RESPONSIBLE FOR INSPECTION. WHICH RESULTED IN FALSIFICATION OF PULL TEST RECORDS. TIME FRAME 1978-82.</u>	3.1, 3.2.3.1, 3.3, 4.3.1, 4.3.2.1, 6.2.1, 7.1.2.1.1, 7.2.2.1.1, 7.2.2.2

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CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN-85-347-007 T50024	CO	113	WBN	Y Y Y Y	IN-85-347-007	NO	PROCEDURE DOES NOT REQUIRE TORQUING OF INSTRUMENT PANEL BOLTS	3.1, 3.2.3, 3.3, 4.3, 6.2, 7.1.2, 7.2.2.1
IN-85-439-001 T50167	CO MP	113 706	WBN	N N N Y K-FORM		SR	REDHEADS HAVE BEEN IMPROPERLY ALTERED, BUT MANAGEMENT REFUSED TO TAKE CORRECTIVE ACTION. DETAILS KNOWN TO QTC, *WITHHELD TO MAINTAIN CONFIDENTIALITY. CONSTRUCTION DEPT. CONCERN.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3.1.1
IN-85-469-002 T50035	CO	113	WBN	N N N Y K-FORM		SR	CORE DRILLING THROUGH REBAR IN THE CEILING OF THE ROD CONTROL DRIVE ROOM (UNIT #1) WITHOUT A CUTTING RELEASE. INDIVIDUAL WAS INSTRUCTED TO DO SO BY FOREMAN. (NAME KNOWN)	3.1, 3.2.2.1, 3.3, 4.2.1, 4.2.2.1, 7.1.1.1.1
IN-85-520-004 T50033	CO	113	WBN	N N N Y K-FORM		SR	DAMAGE TO REBAR IS INDETERMINATE AS THERE HAS BEEN NO FIRM CRITERIA ESTABLISHED AS TO WHAT TO DO, WHOM TO CALL, HOW TO DOCUMENT WHEN REBAR HAS BEEN HIT DURING DRILLING. EACH CREW, EACH INSPECTOR, AND EACH ENGINEER DOES IT A DIFFERENT WAY. UNIT #1, AUX BLDG., 785' ELEV., SPRINKLER SYSTEM AS AN EXAMPLE ONLY.	3.1, 3.2.2.1, 3.3, 4.2.1, 4.2.2.1, 7.1.1.1.1

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LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY

CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN-85-625-002 T50060	CO	113	WBN	N Y Y Y REPORT		SR	ABANDONED REDHEAD HOLES ARE REPAIRED WITH THE REDHEADS STILL EMBEDDED IN CONCRETE. IT IS IMPOSSIBLE TO DETERMINE IF REBAR DAMAGE HAS OCCURRED. THE ABANDONED/REPAIRED REDHEADS ARE LOCATED SITE WIDE.	3.1, 3.2.2, 3.3, 4.2, 6.1, 7.1.1.1, 7.2.1
IN-85-664-001 T50067	CO	113	WBN	N Y Y Y REPORT		SR	POSSIBLE ANCHOR VIOLATIONS IN KEYWAY AREA UNDER REACTOR UNIT 1. SOME ANCHORS WHICH ARE NOT USED SHOULD BE PULLED AND PATCHED. THE CI OBSERVED THESE IN 1983.	3.1, 3.2.2, 3.3, 4.2, 6.1, 7.1.1.1, 7.2.1
IN-85-680-001 T50122	CO	113	WBN	N N N Y K-FORM		SR	WHILE INSTALLING (DRILLING) RED HEAD EXPANSION ANCHORS FOR ANCHORING COMPRESSORS IN BATTERY ROOMS IN REACTOR BUILDING #1, SOME OF THE REBARS WERE CUT. LOCATION EL. 698'-0". CI WITNESSED THIS INCIDENT WHICH OCCURRED IN JAN/FEB '85. RELEASE OF ANY FURTHER INFORMATION WOULD COMPROMISE CONFIDENTIALITY. CONSTRUCTION DEPT. CONCERN.	3.1, 3.2.2.1, 3.3, 4.2.1, 4.2.2.1, 7.1.1.1.1

ATTACHMENT A  
LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY

CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P* S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN-85-845-001 T50136	CO	113	WBN	N N N Y REPORT	1-85-437-WBN	SR	ON SAMPLING SYSTEM: 43, UNISTRUT IS INSTALLED WITH CONCRETE FASTENERS THAT ARE CUT-OFF, TACK WELDED TO THE BACK OF UNISTRUT TO APPEAR AS ANCHORED INTO CONCRETE. THIS SYSTEM WAS REROUTED AND THE PROBLEM WAS CORRECTED. CI EXPRESSED CONCERN ABOUT THE BALANCE OF PLANT UNIT 1 & 2. CI GAVE NO SPECIFICS ABOUT OTHER SYSTEMS OR LOCATIONS.	3.1, 3.2.4.1, 3.3, 4.4.1, 4.4.2.1, 6.3.1, 7.1.3.1.1, 7.2.3.1.1
IN-85-947-002 T50169	CO	113	WBN	N N N Y K-FORM		SR	TORQUE VERIFICATION METHODS FOR REDHEADS ARE NOT CLEARLY DEFINED: THE 0-50 NOTES SAY, ". . . THE TORQUE SHALL BE READ WHILE THE NUT IS IN A TIGHTENING MOTION." BUT CRAFT HAVE BEEN TOLD THEY WILL GET AN IRN IF THE BOLT TURNS WHEN THE INSPECTOR CHECKS THE TORQUE WITH THE CALIBRATED WRENCH. CONSTRUCTION DEPT. CONCERN. STEAMFITTERS - 1985. CI HAS NO MORE INFORMATION.	3.1, 3.2.3.1, 3.3, 4.3.1, 4.3.2.1, 6.2.1, 6.2.4, 7.1.2.1.1, 7.2.1.2.1, 7.2.2.1.1

ATTACHMENT A  
LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY

CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P* S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN-85-947-004 T50169	CO	113	WBN	N N N Y K-FORM		SR	A TEST OF CONCRETE ANCHOR PULL STRENGTH WAS TO BE CONDUCTED AT 3200 LBS. THE PORTAPOWVER UNIT WHICH WAS USED HAD ON A 3000 LB. GAUGE. ENTER THE CONTAINMENT VIA SHIP'S LADDER TO 720'EL. TURN LEFT, AND GO AROUND CONTAINMENT TO CONCRETE WALL. HANGER IS ON LEFT (OUTER) AT - 730'EL, IN OR BELOW THE LAST "WINDOW" (ICE CHUTE OPENING) (OCCURRED ABOUT JUNE 1985 IN UNIT 2) CONSTRUCTION DEPT. CONCERN. CI HAS NO FURTHER INFORMATION.	3.1, 3.2.3.1, 3.3, 4.3.1, 4.3.2.1, 6.2.1, 6.2.4, 7.1.2.1.1, 7.2.1.2.1, 7.2.2.1.1
IN-85-982-001 T50111	CO	113	WBN	Y Y Y Y REPORT	1-85-323-WBN	SR	REBAR LOCATERS NOT USED. REBAR OFTEN HIT DURING RED HEAD DRILLING. MANY RED-HEAD INSERTS HAVE BEEN CUT OFF AND ARE SHORTER THAN SPECIFIED LENGTH, AND OFTEN PULL OUT WHEN TESTED. THREAD ENGAGEMENT IS ALSO TOO SHORT. ONLY EXAMPLE KNOWN HAS BEEN REWORKED (UNIT 2 GO UP LADDER INTO ACCUMULATOR ROOM, GO FORWARD, 3-5 PANELS AT LEFT.) CI HAS NO MORE INFORMATION. NO FOLLOW UP REQUIRED.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3

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CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN-86-115-001 T50169	CO	113	WBN	Y Y Y Y REPORT	I-85-659-WBN	SS	SELF DRILLING EXPANSION SHELL ANCHORS ARE BEING OVERTORQUED. THIS IS DONE TO CORRECT EXCESSIVE GAP BETWEEN BASEPLATE AND WALL. CRAFT PERSONNEL ARE NOT TRAINED TO THE REQUIREMENTS OF SPEC. G-32 PARAGRAPH 3.2. CONSTRUCTION DEPT. CONCERN-CI HAS NO FURTHER INFORMATION. UNITS 1 & 2.	3.1, 3.2.6, 3.3, 4.6, 6.5, 7.1.5, 7.2.5
IN-86-140-002 T50127	CO	113	WBN	Y Y Y Y K-FORM		SR	ANCHORS BOLTS HAVE BEEN CUT AND WELDED TO BASE PLATES. ANCHORS HAVE NOT BEEN PUT IN DEEP ENOUGH, AND CAN PULL OUT EG: TURBINE BLDG UNIT #2, GROUND LEVEL, ROOM NEAR RAILWAY ENTRANCE (ACROSS PASSAGE FROM NORTH VALVE ROOM). CONDUIT HANGER DIRECTLY OVER ENTRY WAY HAS PULLED OUT OF WALL, AND IS BEING HELD UP BY CONDUIT. ALSO HAS WELD LEAD DRAPED OVER HANGER. CONSTRUCTION DEPT. CONCERN. UNIT 2. CI HAS NO FURTHER INFORMATION.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3



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CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN-86-177-001	CO	113	WBN	Y Y Y Y REPORT		SR	DURING REWORK, CI IDENTIFIED NON QA HANGER THAT 4 RED HEAD ANCHORS HAD BEEN CUT OFF. THIS OCCURRED IN THE TURBINE BLDG, ELEV. 685. CI HAS NO FURTHER INFORMATION. CONSTR. DEPT. CONCERN. NO FOLLOW UP REQUIRED.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3
IN-86-190-003	CO	113	WBN	Y Y Y Y REPORT		SS	AN EMPLOYEE TOLD THE CI THAT THE SAFETY RELATED CONCRETE ANCHORS (REHEADS), WERE TESTED BY A SAMPLING PLAN RATHER THAN INDIVIDUALLY. CI QUESTIONED THE ACCEPTABILITY OF THIS PRACTICE. NUC POWER CONCERN. UNIT #1. CI HAS NO ADDITIONAL INFORMATION.	3.1, 3.2.3, 3.3, 4.3, 6.2, 7.1.2, 7.2.2
IN-86-200-003	CO	113	WBN	Y Y Y Y REPORT	1-85-440-WBN	SR	THE USE OF "RED HEADS" FOR SUPPORT IS NOT SAFE IN THAT THE CONCRETE COULD BE HONEYCOMBED AROUND THE "RED HEAD." CONST. DEPT. CONCERN. CI HAS NO ADDITIONAL INFORMATION. NO FOLLOW UP REQUIRED.	3.1, 3.2.1, 3.3, 4.1

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LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY

CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN-86-219-001	CO	113	WBN	N N N Y		SR	A CRAFTSMAN WAS DIRECTED TO GRIND DOWN REDHEAD ANCHORS AND WELD NUTS TO THE BACK SIDE OF SUPPORT PLATES. NAMES AND LOCATIONS ARE KNOWN TO QTC *WITHHELD DUE TO CONFIDENTIALITY. CI HAS NO ADDITIONAL INFORMATION. UNIT #1/1978-1979/NUC. POWER DEPT. CONCERN.	3.1, 3.2.4.1, 3.3, 4.4.1, 4.4.2.1, 6.3.1, 7.1.3, 7.2.3.1.1
IN-86-221-001	CO	113	WBN	N Y Y Y REPORT	1-85-441-WBN	SR	AUX BLDG. (UNIT 1 SIDE), ANNULUS, EL. 755' TO CEILING-"RED HEADS" WERE LEFT IN WALL (AFTER REMOVAL OF CONDUIT) AND GROUTED OVER WITHOUT REMOVING "RED HEADS" NUCPWR DEPT. CONCERN. CI HAS NO ADDITIONAL INFORMATION. NO FOLLOW UP REQUIRED.	3.1, 3.2.2, 3.3, 4.2, 6.1, 7.1.1.1, 7.2.1
IN-86-262-005	CO	113	WBN	N N N Y REPORT	1-85-585-WBN	SR	ELEV. 737', BETWEEN A3/A4 R & S LINE, UNIT # 1, AUX. BUILDING (INSIDE SECURITY), 1979. THERE WERE CABLE TRAY SUPPORTS WHERE BOLTS HAVE ONLY ONE OR TWO THREADS CAUGHT. THESE BOLTS MAY HAVE BEEN TORQUED. THESE BOLTS WERE TOO LARGE FOR THE OPENINGS. CONSTRUCTION DEPT. CONCERN. CI HAS NO FURTHER INFORMATION. NO FOLLOW-UP REQUIRED.	3.1, 3.2.6.1, 3.3, 4.6.1, 4.6.2.1, 6.5.2, 7.1.5.1.1, 7.2.5.2

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CATEGORY: CO CONSTRUCTION SUBCATEGORY: 1130G ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	CTC/NSRS INVESTIGATION REPORT	P* S R	CONCERN DESCRIPTION	REFERENCE SECTION #
IN-86-294-002	CO	113	WBN	Y Y Y Y K-FORM	1-85-529-WBN	SS	IN 1981 THE FIRE PROTECTION SYSTEM IN THE VAULT IN UNIT 2 HAD A BASE PLATED WITH AN ANCHOR BOLT CUT OFF AND TACK WELDED TO THE BACK OF THE BASE PLATE. THE BASE PLATE IS LOCATED INSIDE THE ACCESS DOOR TO THE VAULT AND ON THE CEILING. CI HAS NO ADDITIONAL INFORMATION. CI'S CONCERN IS IN OTHER APPLICATIONS IN THE PLANT. CONSTR. DEPT. CONCERN. NO FOLLOW REQUIRED.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3
PH-85-002-009	CO	113	WBN	Y Y Y Y REPORT		SR	C/I IS CONCERNED ABOUT THE USAGE OF PHILLIPS REDHEAD ANCHOR BOLTS FOR ATTACHING ITEMS TO CONCRETE, DUE TO REDHEADS HAVING BEEN DECLARED UNSUITABLE FOR USE AND REPLACED AT A NUMBER OF OTHER NON-TVA NUCLEAR SITES. CONST. DEPT. CONCERN. C/I HAS NO FURTHER INFORMATION.	3.1, 3.2.1, 3.3, 4.1
PH-85-002-026	CO	113	WBN	Y Y Y Y REPORT		SS	REDHEAD CONCRETE ANCHORS HAVE BEEN IMPROPERLY INSTALLED THROUGH WBNP. CONSTRUCTION DEPT. CONCERN. CI HAS NO FURTHER INFORMATION. NO FOLLOW UP REQUIRED.	3.1, 3.2.6, 3.3, 4.6, 6.5, 7.1.5, 7.2.5

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LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY

CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	SUB CAT	PLT CAT	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P* S R	CONCERN DESCRIPTION	REFERENCE SECTION #
PH-85-003-021	CO	113	WBN N N N Y K-FORM	1-85-384-WBN	SR	MANAGEMENT REQUIRED PERSONNEL TO DRILL HOLES IN CONCRETE AND CUT REBAR WITHOUT AN ENGINEERING EVALUATION BEING CONDUCTED. CI HAS NO MORE INFORMATION AVAILABLE NO FOLLOW REQUIRED.	3.1, 3.2.2.1, 3.3, 4.2.1, 4.2.2.1, 7.1.1.1.1
PH-85-035-007	CO	113	WBN N N Y Y		SR	CI IS CONCERNED ABOUT USING 3/8" RED HEADS INSTEAD OF 3/4" IN SYSTEM 68 DRAIN, REACTOR 1 AT ELEVATION 720 OR 721, NEAR RC PUMP 2. CONSTRUCTION DEPT. CONCERN. CI HAS NO FURTHER INFORMATION.	3.1, 3.2.4.1, 3.2.4.2, 3.3, 4.4.1, 4.4.2.1, 4.4.2.2, 6.3.1, 6.3.2, 7.1.3.1.1, 7.1.3.1.2, 7.2.3
PH-85-054-NO3	CO	113	WBN Y Y Y Y		SR	NRC IDENTIFIED THE FOLLOWING CONCERN FROM REVIEW OF QTC FILE. "BOLT HEADS WERE WELDED TO A PLATE TO RESEMBLE A BOLT IN PLACE. CI HAD NO SPECIFIC LOCATION."	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3
BNPQCP-10.35-8-23	CO	113	BLN Y Y Y Y		SR	OLD SSD'S USED IN PIPE SUPPORTS THAT WERE INSTALLED WHEN RANGES WERE FIRST INSTALLED.	3.1, 3.2.6, 3.3, 4.6, 6.5, 7.1.5, 7.2.5

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CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	SUB CAT	PLT CAT	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
BNPQCP-10.35-8-29	CO	113	BLN N Y N N K-FORM		SR	CI CONCERNED THAT IN 1982 AND 1983, EMPLOYEES WHO WORKED IN RB DRILLED HOLES FOR *SSDS, WBS, ETC., WITHOUT WORK RELEASES COMPLETED UNTIL AFTER HOLES WERE DRILLED.	3.1, 3.2.6.4, 3.3, 4.6.1, 4.6.2.4, 6.5.2, 7.2.5.2
BNPQCP-10.35-8-7	CO	113	BLN N Y N N K-FORM		SR	CONCRETE PULLED OUT OF WALL WHEN RED HEADS WERE REMOVED FROM A2 (S) LINE ELEVATION 610.	3.1, 3.2.2.3, 3.3, 4.2.1, 4.2.2.3, 7.1.1.1.3
BNPQCP-10.35-8-8	CO	113	BLN N Y N N K-FORM		SR	RUSTED RED HEADS WERE REMOVED FROM A 9 (U) LINE ELEVATION 610.	3.1, 3.2.5.3, 3.3, 4.5.1, 4.5.2.3, 6.4, 7.1.4.1.4, 7.2.4

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CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P* S R	CONCERN DESCRIPTION	REFERENCE SECTION #
SQP-5-005-001	CO	113	SQN	Y Y Y Y	1-86-120-SQN	SS	SEQUOYAH: IN 1976-77, AUX BLDG, ELEVATION 749, OF UNIT 1, THE CONDUIT AND CABLE TRAY SUPPORTS IN THE MOV BOARD ROOM 1A, BETWEEN COLUMN LINES A-2 TO A-8 AND "R" LINE WERE INCORRECTLY INSTALLED. A CUTTING TORCH WAS USED TO ENLARGE THE HOLES ON THE BACK SIDE OF THE SUPPORT PLATES. THE HOLES WERE BEVELED TO ALLOW THE ANCHOR BOLTS TO FIT THROUGH THE HOLES DETAILS KNOWN TO QTC, WITHHELD TO MAINTAIN CONFIDENTIALITY. NO FURTHER INFORMATION MAY BE RELEASED. CI HAS NO ADDITIONAL INFORMATION. CONST. DEPT. CONCERN. NO FURTHER INFORMATION MAY BE RELEASED. NO FOLLOW-UP REQUIRED.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3

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CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P* S R	CONCERN DESCRIPTION	REFERENCE SECTION #
SQP-5-005-002	CO	113	SQN	N N Y Y	I-86-120-SQN	SS	SEQUOYAH: IN 1976-77, AUX BLDG, ELEVATION 749, OF UNIT 1, IN THE MOV BOARD ROOM 1A, BETWEEN COLUMN LINES A-2 TO A-8 AND "R" LINE HOLES WERE LEFT IN THE CEILING UNDER THE CONDUIT AND CABLE TRAY SUPPORTS. REBAR WAS HIT WHILE DRILLING THE HOLES, SO THE HOLE LOCATION WAS MOVED, AND THE OLD HOLES WERE LEFT WITH THE SHELLS INSTALLED AND THE HOLES NOT FILLED WITH GROUT. DETAILS KNOWN TO QTC WITHHELD TO MAINTAIN CONFIDENTIALITY. NO FURTHER INFORMATION MAY BE RELEASED. CI HAS NO ADDITIONAL INFORMATION. CONST. DEPT. CONCERN. NO FURTHER INFORMATION MAY BE RELEASED. NO FOLLOW-UP REQUIRED.	3.1, 3.2.2.1, 3.2.2.2, 3.3, 4.2.1, 4.2.2.1, 4.2.2.2, 6.1.2, 7.1.1.1.1, 7.1.1.1.2, 7.2.1

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CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
SQP-5-005-003	CO	113	SQN	Y Y Y Y	1-86-120-SQN	SS	SEQUOYAH: IN 1976-77, AUX BLDG. ELEVATION 749, OF UNIT i, IN THE MOV BOARD ROOM 1A, BETWEEN COLUMN LINES A-2 TO A-8 AND "R" LINE THE ANCHOR SHELLS WERE CUT OFF AND INSTALLED WHEN THEY HIT REBAR DURING INSTALLATION. THE SHELLS WERE CUT OFF TO FACILITATE INSTALLATION OF CONDUIT AND CABLE TRAY SUPPORTS TO THE CEILING. DETAILS KNOWN TO QTC AND WITHHELD TO MAINTAIN CONFIDENTIALITY. NUCLEAR POWER CONCERN NO FURTHER INFORMATION MAY BE RELEASED. CI HAS NO FURTHER INFORMATION. NO FOLLOW UP REQUIRE.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3



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CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
SQP-5-005-004	CO	113	SQN	Y Y Y Y REPORT	1-86-120-SQN	SS	SEQUOYAH: IN 1976-77, AUX BLDG. ELEVATION 749, OF UNIT 1, IN THE MOV BOARD ROOM 1A, BETWEEN COLUMN LINES A-2 TO A-8 AND "R" LINE THE CONCRETE ANCHORS WERE INSTALLED AT AN ANGLE SO GREAT THAT THE HOLES IN THE SUPPORT PLATES HAD TO BE BEVELED ON THE BACK SIDE TO ENABLE THE ANCHOR BOLT TO FIT THROUGH THE PLATE. THESE ANCHORS WERE INSTALLED FOR CONDUIT AND CABLE TRAY SUPPORTS IN THE CEILING. DETAILS KNOWN TO QTC WITHHELD TO MAINTAIN CONFIDENTIALITY. NO FURTHER INFORMATION MAY BE RELEASED. CI HAS NO ADDITIONAL INFORMATION. CONST. DEPT. CONCERN. NO FURTHER INFORMATION MAY BE RELEASED. NO FOLLOW-UP REQUIRED.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3

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CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P* S R	CONCERN DESCRIPTION	REFERENCE SECTION #
SQP-5-005-005	CO	113	SQN	Y Y Y Y	1-86-120-SQN	SS	SEQUOYAH: IN 1976-77, AUX BUILDING ELEVATION 749, OF UNIT 1, IN THE MOV BOARD ROOM 1A BETWEEN COLUMN LINES A-2 TO A-8 AND "R" LINE NONCONFORMING CONDITIONS WITH THE INSTALLATION OF CONDUIT AND CABLE TRAY SUPPORTS SUCH AS, CUT OFF ANCHOR SHELLS, INCORRECTLY INSTALLED ANCHOR SHELLS, WRONG SIZE ANCHORS, CUT REBAR, MODIFIED SUPPORT PLATES, AND ANCHOR HOLES NOT FILLED WERE IDENTIFIED: HOWEVER THESE NONCONFORMING CONDITIONS WERE NOT DOCUMENTED AND APPROPRIATE ACTION IMPLEMENTED. DETAILS KNOWN TO QTC, WITHHELD TO MAINTAIN CONFIDENTIALITY. NO FURTHER INFORMATION MAY BE RELEASED. CI HAS NO ADDITIONAL INFORMATION. CONST. DEPT. CONCERN. NO FOLLOW-UP REQUIRED.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3

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CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
SQP-5-005-006	CO-113		SQN	N N Y Y REPORT	1-86-120-SQN	SS	SEQUOYAH: IN 1976-77, AUX BUILDING, ELEVATION 749 OF UNIT 1, IN THE MOV BOARD ROOM A, BETWEEN COLUMN LINES A2 to A8 AND "R" LINE, CONCRETE ANCHORS WERE DRILLED INTO THE CEILING, MANY OF WHICH HIT REBAR. THIS MAY NOT HAVE BEEN REPORTED TO ENGINEERING SO THAT ENGINEERING COULD EVALUATE ANY DAMAGE. THE HOLES WERE RELOCATED AND REDRILLED, AND THE CONDUIT AND CABLE SUPPORTS WERE INSTALLED IN THE CEILING. DETAILS KNOWN TO QTC, WITHHELD TO MAINTAIN CONFIDENTIALITY. NO FURTHER INFORMATION MAY BE RELEASED. CI HAS NO ADDITIONAL INFORMATION. CONST. DEPT. CONCERN. NO FOLLOW-UP REQUIRED.	3.1, 3.2.4.1, 3.2.4.2, 3.3, 4.4.2.1, 4.4.2.2, 6.3.1, 6.3.2, 7.1.3.1.1, 7.1.3.1.2, 7.2.3

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CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
SQP-5-005-007	CO	113	SQN	N N Y N REPORT	1-86-120-SQN	SS	SEQUOYAH: IN 1976-77, IN THE AUX BLDG., ELEVATION 749 OF UNIT 1, ANCHOR BOLTS IN THE CEILING OF THE MOV BOARD ROOM 1A BETWEEN COLUMN LINES A-2 TO A-8, AND "R" LINE WERE VERIFIED TO BE THE WRONG SIZE. THESE ANCHOR BOLTS ARE UTILIZED TO SUPPORT CONDUIT AND CABLE TRAY. DETAILS ARE KNOWN TO QTC WITHHELD TO MAINTAIN CONFIDENTIALITY NO FURTHER INFORMATION MAY BE RELEASED CONSTRUCTION DEPT. CONCERN. NO FOLLOW UP REQUIRED.	3.1, 3.2.4.2, 3.3, 4.4.2.2, 6.3.2, 7.1.3.1.2, 7.2.3.1.2
WI-85-004-002	CO	113	WBN	N N N Y REPORT	WI-85-004-002	NO	WAS NRC BULLETIN 79.02 APPLICABLE TO THE WBNP AND HOW WAS IT IMPLEMENTED?	3.1, 3.2.4.1, 3.3, 4.4.2.1, 6.3.1, 7.1.3.1.1, 7.2.3.1.1
WI-85-011-001	CO	113	WBN	Y Y Y Y REPORT		SS	SOME ELECTRICAL HANGERS IN THE TURBINE AND CONTROL BUILDINGS HAD ANCHOR BOLTS WELDED TO THE EMBED WHERE REBAR INTERFERED WITH THE INSTALLATION. (SPECIFIC LOCATIONS NOT KNOWN).	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3

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LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY

CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P* S R	CONCERN DESCRIPTION	REFERENCE SECTION #
XX-85-010-M02	CO	113	WBN	N N N Y		SS	NRC IDENTIFIED THE FOLLOWING CONCERN FROM THEIR REVIEW OF THE QTC FILES: ERT REPORT QUESTIONS WHETHER ALL INFORMATION ON 42% OF ANCHORS FAILING ORIGINAL ACCEPTANCE CRITERIA WAS KNOWN TO NRC IN TVA/NRC RESOLUTION OF BULLETIN 79-02 REQUIREMENTS AND WORK PLAN NO. S-1206, SECTION 2 ACCEPTANCE CRITERIA.	3.1, 3.2.4.1, 3.3, 4.4.2.1, 6.3.1, 7.1.3.1.1, 7.2.3.1.1
XX-85-010-001	CO	113	SQN	Y Y Y Y REPORT		SS	SEQUOYAH - WHEN REMOVING VOIDED HANGERS, CI DISCOVERED SEVERAL INSTANCES OF NUTS WELDED TO BACK OF BASE PLATES WITH THE CONCRETE CHIPPED AWAY TO ACCEPT NUT. ANCHOR BOLTS WOULD ACCEPT TORQUE BUT WOULD NOT SUPPORT BASE PLATES. PER CI, THIS SITUATION COULD EXIST FOR THE INSTALLED HANGERS. EXAMPLE: CVC SYSTEM REACTOR BUILDING, ACCUMULATOR ROOM 4. THIS WAS ABOUT 4 YEARS AGO AT SEQUOYAH IN UNITS 1 & 2.	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3

ATTACHMENT A  
LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY

CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P# S R	CONCERN DESCRIPTION	REFERENCE SECTION #
XX-85-023-001	CO IH	113 000	SQN	N N Y Y REPORT		SS	SEQUOYAH UNIT #2. PULL TESTS WERE ROUTINELY BY-PASSED AND/OR INCORRECTLY DOCUMENTED ON HANGERS/ANCHORS INSTALLED IN THE ANNULUS AREA. MID-1977. NO NAMES OR SPECIFIC LOCATIONS WERE PROVIDED. CONSTRUCTION DEPT. CONCERN. CI HAS NO MORE INFORMATION. NO FOLLOW-UP REQUIRED.	3.1, 3.2.3.1, 3.3, 4.3.2.1, 4.3.2.2, 6.2.1, 6.2.2, 7.1.2.1.1, 7.1.2.1.2, 7.2.2.1.1, 7.2.2.1.2

\* PSR CODES:

SR - NUCLEAR SAFETY-RELATED  
SS - NUCLEAR SAFETY SIGNIFICANT  
NO - NOT NUCLEAR SAFETY-RELATED

**ATTACHMENT B**  
**LIST OF EVALUATORS**

**WATTS BAR NUCLEAR PLANT**

**Lead Evaluator(s):** James Chesney  
Gary L. Portwood  
**Evaluator(s):** Don Owen  
Martin Bailey

**SEQUOYAH NUCLEAR PLANT**

**Lead Evaluator:** Gary L. Portwood  
**Evaluator:** James Chesney

**BROWNS FERRY NUCLEAR PLANT**

**Lead Evaluator(s):** Gary L. Portwood  
James Chesney

**BELLEFONTIE NUCLEAR PLANT**

**Lead Evaluator(s):** James Chesney  
Don Owen  
**Evaluator:** Gary L. Portwood

Attachment C

List of Concerns by Issue

Category: CO Construction Subcategory: 113 Anchorages

Concern Number	Issue
BFNIESC-85-01	1.2.6
BNPQCP10.35-3	1.2.4
BNPQCP10.35-8-23	1.2.6
BNPQCP10.35-8-29	1.2.6
BNPQCP10.35-8-7	1.2.2
BNPQCP10.35-8-8	1.2.5
HI-85-020-N02	1.2.4
HI-85-073-N04	1.2.4
HI-85-113-N02	1.2.6
IN-85-020-001	1.2.4 and 1.2.5
IN-85-037-001	1.2.4
IN-85-055-002	1.2.4
IN-85-232-001	1.2.2
IN-85-246-003	1.2.4
IN-85-285-001	1.2.4
IN-85-285-002	1.2.3
IN-85-285-003	1.2.4
IN-85-339-001	1.2.4
IN-85-339-003	1.2.3
IN-85-339-004	1.2.3
IN-85-347-007	1.2.3
IN-85-439-001	1.2.4
IN-85-469-002	1.2.2
IN-85-520-004	1.2.2
IN-85-625-002	1.2.2
IN-85-664-001	1.2.2
IN-85-680-001	1.2.2
IN-85-845-001	1.2.4
IN-85-947-002	1.2.3
IN-85-947-004	1.2.3
IN-85-982-001	1.2.4
IN-86-115-001	1.2.6
IN-86-140-002	1.2.4
IN-86-177-001	1.2.4
IN-86-190-003	1.2.3



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3.2.4.4 Bellefonte Nuclear Plant	
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3.2.5.3 Bellefonte Nuclear Plant	
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3.2.6.3 Browns Ferry Nuclear Plant	
3.2.6.4 Bellefonte Nuclear Plant	
3.3 <u>Justification of Evaluation Process</u>	

3.2 Requirements or Criteria Established for Individual Issues

3.2.1 Design of Anchors

- a. The expurgated employee concern file was reviewed for additional information.
- b. Reviewed NSRS investigation report I-85-440-WBN on the subject concern to determine the adequacy of the methodology and findings as well as applicability to other TVA nuclear plants.
- c. Reviewed SQN Generic Concerns Task Force (GCTF) report to determine the methodology employed, the conclusions reached with respect to anchor design suitability and the applicability of this report to other TVA nuclear plants.
- d. Reviewed Watts Bar Nuclear Plant Employee Concerns Task Group (ECTG) Element Report CO11302 on the subject concern to determine the parameters of the evaluation methodology, the conclusions reached, and its applicability to other TVA nuclear plants. Also, determined if the findings of this evaluation were in agreement with the findings of the reports in sections b and c.

3.2.2 Damage to Concrete/Rebar

The following steps performed are applicable to the issue and concerns addressed but are not site-specific.

- a. The expurgated employee concern file was reviewed for additional information.
- b. General Construction Specification G-32, Revision 11 "Bolt Anchors Set in Hardened Concrete" was reviewed for applicable information.

3.2.2.1 Watts Bar Nuclear Plant

- a. A detailed review of the QTC/ERT investigation on concern IN-85-469-002 was made.
- b. A detailed review of NSRS investigation report I-85-384-WBN on concern PH-85-003-021 was made.

failing, for a failure rate of 0.36 percent. This one anchor was corrected according to G-32. Of the 60 anchors that did not meet thread engagement requirements, none failed to develop the factored loads. Two of these 60 would not fully develop the anchor. The 15 anchors that did not meet recess/protrusion requirements were proof load tested with no failures.

The 0.36 percent failure rate compared favorably to the pull test data for WBN with a 2.92 percent failure rate. Since the failure rate of this sample was less than one percent, DNE accepted the anchors identified by this NCR as installed.

NCR 3409R identified 500 HVAC duct supports in the Control, Reactor and Auxiliary Buildings that were not proof load tested according to G-32.

The NCR was dispositioned to perform a 79-02 sample program of 200 anchors in the Auxiliary Building, 100 anchors in each Reactor Building, and 200 anchors in the Control Building.

The results of this sample were within the limits of the NRC-OIE Bulletin and the anchors were accepted as installed by DNE.

NCR 3747R was initiated to identify additional supports exhibiting the same characteristics as those anchors identified in NCRs 2873R, 3409R and 2803R.

DNE dispositioned this NCR to revise WBN-QCP-1.14 as follows:

- The lot is defined according to G-32 except that installation timeframe, identification of responsible foreman, and limiting the lot to the work of one foreman is not required.
- Inspect and document according to G-32 plug depth and shell recess for a minimum of 25 percent of the bolts for each baseplate before proof load testing.

non 79-02 anchor sampling program, these deficiencies will be resolved by either analysis or physical corrective action (CATD 11300-BFN-03). This will suffice to adequately address anchor installations for safety-related Class I and Class II items, not included in the scope of NRC OIE Bulletin 79-02, installed prior to February 27, 1981. For anchors included and inspected under the scope of NRC OIE Bulletin 79-02, any deficiencies identified will be resolved by physical repair/replacement. This program is still being undertaken.

(CATD 11300-BFN-04). The major portion of deficiencies identified were due to the lack of specific, detailed criteria during plant construction. Specifically, as late as 1972 vendor information was being used to accomplish anchor installation and no criteria existed to require pull tests to be performed. No existing installation/testing problems of a significant nature have been identified. Current installations are made per BFN-MAI-4, "Bolt Anchors Set in Hardened Concrete Structures." This procedure is fully adequate with respect to the requirements found in TVA General Construction Specification G-32.

#### 4.3.2.4 Bellefonte Nuclear Plant

The expurgated employee concern file contained no additional information.

General requirements for selection of expansion anchors for inspection and testing are found in General Construction Specification G-32, section 4.7 and are as follows:

#### Selection of Expansion Anchors for Inspection and Testing

Anchors to be inspected and tested in accordance with sections 4.3 and 4.4 shall be randomly selected from a lot after installation of the lot. If there is more than one size of anchor in the lot, selection of anchors shall be made without bias toward any size of anchor. The minimum number of anchors inspected and tested in each lot shall be as given in Table 4.7.

6. Final comments applicable to the subject of this issue are as follows:
- a. A significant amount of work has been performed and is still being performed in many areas by SQN Mechanical and Electrical Modifications, SQN DNE and SQN Compliance on issues applicable to the subject concerns. Documentation initiated by the NSRS, DNE and SQN-GCTF is being tracked and statued by the SQN Compliance section to insure resolutions of each open issue.
  - b. This evaluation has determined that the necessary programs and procedures are in place and significant emphasis has been placed on each item to fully answer specific concerns and further prove the adequacy of SQN's anchor program.

4.4.2.3 Browns Ferry Nuclear Plant

This issue is factual and identifies a problem, but corrective action for the problem was initiated before this employee concerns evaluation of this issue was undertaken. Specific instances of the condition where anchors had been altered were identified during the plant construction process. This fact is found in correspondence initiated during the initial 79-02 program in 1979-1980. No recent instances of altered anchors have been identified by site personnel during normal anchor tests or inspections. PI 86-05, PI 86-01, SMMI 5.1-A and MMI-159 contain adequate mechanism to reveal altered anchors and correct/replace as required. Inspection of SSDs for cone expander depth, shell recess, thread engagement, etc., is sufficient to detect altered anchors during the inspection process. M&AI-4 and G-32 are also sufficient to identify and control this issue. Note: See section 4.3.2.3 of this report for detailed criteria and findings on this issue.

4.4.2.4 Bellefonte Nuclear Plant

The expurgated employee concern file contained no additional information.

- 6.4.6.3.1 For bolts in SSDs and nuts on grouted anchors or welded studs, witnesses the installation or, alternately:
- 6.4.6.3.1.1 Marks a match line on the two bolt heads or nuts, as applicable, and plate.
  - 6.4.6.3.1.2 Slightly loosens the bolts or nuts, as applicable.
  - 6.4.6.3.1.3 Retightens and confirms that the match lines are reasonably aligned.

BNP-QCP-2.15, "Structural and Miscellaneous Steel Installation," applies to all exposed permanent steel erected for safety-related structures and components except when covered by other procedures. Section 7.2.5.1 states that bolt tightness (or nut for threaded rod) shall be acceptable if the bolt (or nut for threaded rod) cannot be turned with the fingers.

BNP-QCP-6.17, "Seismic Support Installation and Inspection," applies to all seismic pipe supports and valve stem extension supports permanently installed in Category I structures. Section 7.7.4.1 states that bolt tightness is acceptable if the bolt cannot be turned with the fingers.

Upon completion of these interviews and procedural reviews, interviews were conducted with cognizant craft personnel (four electrician foremen, three sheetmetal worker foremen and six steamfitter foremen). These interviews revealed these foremen had a very good working knowledge of applicable specifications and requirements. All those interviewed were knowledgeable of the requirements for anchor perpendicularity, protrusion and recession. Inconsistencies were noted, however, in the foremen's knowledge of bolt tightening requirements. The sheetmetal foremen indicated that they tighten bolts strictly in accordance with BNP-QCP-2.8 (that is contact with the baseplate plus 1/8 to 1/4 of a turn). The electrician foremen indicated that they tighten bolts in accordance with BNP-QCP-2.8 and torquing requirements found on electrical drawings.

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LIST OF CONCERNS INDICATING SAFETY RELATIONSHIP AND GENERIC APPLICABILITY

CATEGORY: CO CONSTRUCTION SUBCATEGORY: 11300 ANCHORAGES

CONCERN NUMBER	CAT	SUB CAT	PLT LOC	B B S W F L Q B	QTC/NSRS INVESTIGATION REPORT	P* S R	CONCERN DESCRIPTION	REFERENCE SECTION #
HI-85-073-N04	CO	113	WBN	Y Y Y Y REPORT		SR	NRC IDENTIFIED THE FOLLOWING CONCERN FROM REVIEW OF THE QTC FILE: "PER REVIEW OF THE EXCERPT THE CONCERN APPEARS TO BE THAT SOME ANCHORS WERE FOUND TO BE WELDED TO THE REBAR REINFORCEMENT IN THE CONCRETE. BOLTS WHICH HAD BEEN CUT TO THE DEPTH OF THE PLATE THEY WENT THROUGH AND THEN SPOT WELDED ON THE BACK SIDE, NOT EVEN ENTERING THE CONCRETE."	3.1, 3.2.4, 3.3, 4.4, 6.3, 7.1.3, 7.2.3
HI-85-113-N02	CO CO	109 113	WBN	Y Y Y Y REPORT		SR	NRC IDENTIFIED THE FOLLOWING CONCERN FROM REVIEW OF THE QTC FILE: "INCORRECT LUBRICANT FOR CABLE PULLS." "IMPROPER <u>INSTALLATION OF BOLTS, PLATES, AND ANCHORS IN THE AUXILIARY BUILDING.</u> " "WIRE SPLICED IN TRAYS AND CONDUITS."	3.1, 3.2.6, 3.3, 4.6, 6.5, 7.1.5, 7.2.5
IN-85-020-001 T50026	CO	113	WBN	Y Y Y Y K-FORM	1-85-143-WBN	SS	UNIT 2, REACTOR BLDG, ELEV. 713 ANNULUS AREA, 5/8" PHILLIPS "RED HEAD" WEDGE ANCHORS IN DUCT SUPPORTS #1582, 1583 WERE IMPROPERLY INSTALLED. THIS WAS CAUSED BY DRILLING THE HOLES TOO DEEP OR NOT DEEP ENOUGH. THE "RED HEADS" THAT DID NOT MEET MINIMUM EMBEDMENT LENGTHS WERE CUT OFF FLUSH WITH THE WALL. ALSO, SOME "RED HEADS" WERE DETERIORATED AND RUSTED.	3.1, 3.2.4, 3.2.5, 3.3, 4.4, 4.5, 6.3, 6.4, 7.1.1.3, 7.1.4, 7.2.3, 7.2.4

Attachment C (continued)

Concern Number	Issue
IN-86-200-003	1.2.1
IN-86-219-001	1.2.4
IN-86-221-001	1.2.2
IN-86-262-005	1.2.6
IN-86-294-002	1.2.4
PH-85-002-009	1.2.1
PH-85-002-026	1.2.6
PH-85-003-021	1.2.2
PH-85-035-007	1.2.4
PH-85-054-N03	1.2.4
SQP-5-005-001	1.2.4
SQP-5-005-002	1.2.2
SQP-5-005-003	1.2.4
SQP-5-005-004	1.2.4
SQP-5-005-005	1.2.4
SQP-5-005-006	1.2.4
SQP-5-005-007	1.2.4
WI-85-004-002	1.2.4
WI-85-011-001	1.2.4
XX-85-010-N02	1.2.4
XX-85-010-001	1.2.4
XX-85-023-001	1.2.3