

LICENSEE EVENT REPORT (LER)

Facility Name (1) Dresden Nuclear Power Station
 Docket Number (2) 0 | 5 | 0 | 0 | 0 | 2 | 4 | 9
 Page (3) 1 | of | 0 | 6
 Title (4) Primary Containment Structural Steel Connections Outside Final Safety Analysis Report Design
 Criteria Due to Apparent Original Construction Oversight

Event Date (5)			LER Number (6)			Report Date (7)			Other Facilities Involved (8)	
Month	Day	Year	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)
0	3	1	6	8	7	8	7	8	N/A	0 5 0 0 0
0	3	1	6	8	7	8	7	8	N/A	0 5 0 0 0

OPERATING MODE (9) N
 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)
 POWER LEVEL (10) 0 | 0 | 0
 20.402(b) 20.405(c) 50.73(a)(2)(iv) 73.71(b)
 20.405(a)(1)(i) 50.36(c)(1) 50.73(a)(2)(v) 73.71(c)
 20.405(a)(1)(ii) 50.36(c)(2) 50.73(a)(2)(vii) Other (Specify
 20.405(a)(1)(iii) 50.73(a)(2)(i) 50.73(a)(2)(viii)(A) in Abstract
 20.405(a)(1)(iv) X 50.73(a)(2)(ii) 50.73(a)(2)(viii)(B) below and in
 20.405(a)(1)(v) 50.73(a)(2)(iii) 50.73(a)(2)(x) Text)

LICENSEE CONTACT FOR THIS LER (12)
 Name K. Knudtson, Technical Staff Engineer (X-485)
 TELEPHONE NUMBER AREA CODE 8 | 1 | 5 | 9 | 4 | 2 | - | 2 | 9 | 2 | 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
B	N H	S P T	B 2 3 5	N					

SUPPLEMENTAL REPORT EXPECTED (14)
 Yes (If yes, complete EXPECTED SUBMISSION DATE) X | NO
 Expected Submission Date (15) Month | Day | Year

ABSTRACT

On March 16, 1987 with Unit 3 in the startup mode, station personnel were notified by the Station Nuclear Engineering Department (SNED) that Unit 3 Primary Containment drywell structural steel did not meet the Final Safety Analysis Report (FSAR) design requirements due to inadequate connections found between radial and tangential beams. A review of the Unit 3 drywell structural steel had been initiated as a result of similar discrepancies found on Dresden Unit 2, which were previously reported under Licensee Event Report No. 87-003 on Docket #050237. An inspection data assessment completed on March 16, 1987 revealed that six beam connections did not meet FSAR design criteria. Further inspections were subsequently performed during a Unit 3 short outage during August 1987. An inspection data assessment completed on October 29, 1987 indicated that five additional connections were in excess of the FSAR design criteria. Inspection of the remaining Unit 3 drywell structural steel was completed in April, 1988 during a refuel outage. The final inspection data assessment completed on April 25, 1988, indicated that one additional beam connection was outside FSAR design criteria. The final result of all inspections was that 12 structural steel connections in the Unit 3 drywell did not meet FSAR design criteria. It is believed that the as-built condition was not adequately verified with the design prints during original construction. The safety significance of this event has been considered minimal since the as-found condition of the structural steel connections was adequate to meet operability requirements under all design basis events. These deficiencies were repaired during the 1988 Unit 3 refueling outage.

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TEXT

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2527 Mwt rated core thermal power. Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

EVENT IDENTIFICATION:

Primary Containment Structural Steel Connections Outside Final Safety Analysis Report (FSAR) Design Criteria Due to Apparent Original Construction Oversight.

A. CONDITIONS PRIOR TO EVENT:

Unit: 3	Event Date: 3/16/87	Event Time: 1130 hours
Reactor Mode: N	Mode Name: Startup	Power Level: 0%

B. DESCRIPTION OF EVENT:

On February 27 and 28, 1987, with Unit 3 shut down for a short maintenance outage, a limited inspection of the Unit 3 Drywell Structural Steel [NH] connections was performed by Technical Staff and Sargent and Lundy (S & L) engineering personnel. The NRC Resident Inspector accompanied the inspection team during some of this activity. This inspection was made as a result of discrepancies discovered on Dresden Unit 2 Drywell Structural Steel [NH] connections during the 1987 Unit 2 refueling outage. The scope of the Unit 3 drywell inspection consisted of a random sample of Structural Steel [NH] connections on 2 of the 5 Drywell Primary Containment elevations (elevations 515' and 537'). A total of 78 connections [NH] were inspected. Of these, 32 were found to differ from the original design drawings. Figures 1 and 2 show the inspection point locations. An inspection data assessment completed on March 16, 1987 revealed that certain of these connections were outside of the conservative FSAR design basis criteria in their as-found condition. These were the connections for tangential beams T9 (left side only), T33, T34 and T36 (right side only). Because of the deficiencies in these connections, radial beam R19 at azimuth 22° - 30' and the connection at the biological shield also do not meet the FSAR design criteria. However, analysis performed indicates that all these connections meet operability limits for all design basis events.

In August 1987, during a short Unit 3 outage, a further inspection of the Drywell Structural Steel connections was performed. Subsequent analysis completed on October 29, 1987, has shown that five additional connections are in excess of the FSAR design criteria. These connections were identified as follows; all were found to meet operability limits for all design basis events.

Elevation	Beam	Connections	
		Left	Right
515'	T19	X	X
	T10	X	
		Inside	Outside
515'	R23		X
	R24		X

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TEXT

In April, 1988 the inspection of all drywell structural steel connections was completed. Analysis completed on April 25, 1988 indicated only one additional connection in excess of FSAR design criteria. This was a bolted radial beam connection of beam R2 on elevation 515' that was found with loose nuts.

C. CAUSE OF EVENT:

Comprehensive review of this issue attributes the root cause of this event to be inadequate verification of the as-built configuration against the design drawings during original construction. This report is submitted in accordance with 10 CFR 50.73(a)(2)(ii), which requires the reporting of any condition outside the plant's design basis.

D. SAFETY SIGNIFICANCE OF EVENT:

The sample inspection of Unit 3 Drywell Structural Steel [NH] connections had been initiated as a result of Dresden Unit 2 Drywell Structural Steel [NH] discrepancies. As reported under Reportable Occurrence No. 87-003-01 on Docket #050237, certain Unit 2 Drywell Structural Steel [NH] connections had been found on January 8, 1987 to be in excess of FSAR design requirements. Comprehensive inspections and analysis of the as-found condition of the Unit 2 Drywell Structural Steel [NH] found that these discrepancies, although in some cases in excess of conservative FSAR design requirements, did not exceed operability criteria under any design basis events. For this reason, a sample inspection at this time of the Unit 3 Drywell Structural Steel [NH] was deemed adequate. The connections chosen for this inspection were basically those which were more prone to exceed FSAR requirements if discrepancies of a similar nature as previously noted on Unit 2 were found.

A data assessment of the Unit 3 sample inspection completed on March 16, 1987 indicated that the connections for tangential beams T9 (left side only), T33, T34, and T36 (right side only) were in excess of FSAR criteria. Because of the deficiencies in these connections, radial beam R19 connection at azimuth 22° - 30' and the connection at the biological shield also did not meet the highly conservative FSAR design criteria. However, analysis performed indicates that all these connections meet operability limits for all design basis events. A safety evaluation performed by the Station Nuclear Engineering Department (SNED) in accordance with 10 CFR 50.59 determined that sufficient data had been collected at this time and Unit 3 could return to service to complete its operating cycle.

On August 7, 1987, Unit 3 was shut down due to feedwater [SJ] piping oscillations, as reported by LER No. 87-13 on Docket #050249. A Primary Containment entry was made while the unit was shut down in order to perform further inspections of the Drywell Structural Steel and finalize engineering design work for the necessary repairs previously identified. Although five additional connections were found to exceed the conservative FSAR design criteria, all were determined to be operable in the as-found condition.

In April, 1988 during the Unit 3 refuel outage, the drywell structural steel inspection was completed. One additional connection was found outside FSAR requirements, but was determined to meet operability criteria. During the refuel outage, all repairs to the structural steel connections were completed. For these reasons, the safety significance of this event is minimal.

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TEXT

E. CORRECTIVE ACTIONS:

A repair program has been developed and completed to assure the Drywell Structural Steel [NH] meets the FSAR design requirements. These repairs were completed during the 1988 Unit 3 refueling outage. A comprehensive inspection was also performed at this time.

It is believed that the current level of inspection would prevent a recurrence of this type under the present modification program. Dresden Administrative Procedure (DAP) 5-1, Plant Modification Program, was revised on December 4, 1986 to require the performance of a final field walkdown of the entire modification by the station cognizant engineer, using the installation documents as a reference. Furthermore, the present program requires that all modifications involving safety related load bearing supports must be dimensionally verified.

F. LAST PREVIOUS OCCURRENCE:

Licensee Event Report No. 87-003, under Docket No. 050237, identified a similar problem with the Dresden Unit 2 Drywell Structural Steel [NH], in which the as-built configuration of certain connections differed from the original design drawings. Repairs were performed to ensure compliance with FSAR design criteria.

G. COMPONENT FAILURE DATA:

No component failures occurred. Primary Containment structures are not included in the NPRDS reporting criteria.

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▲ = Connection Differs From Design Configuration △ = No Deficiencies

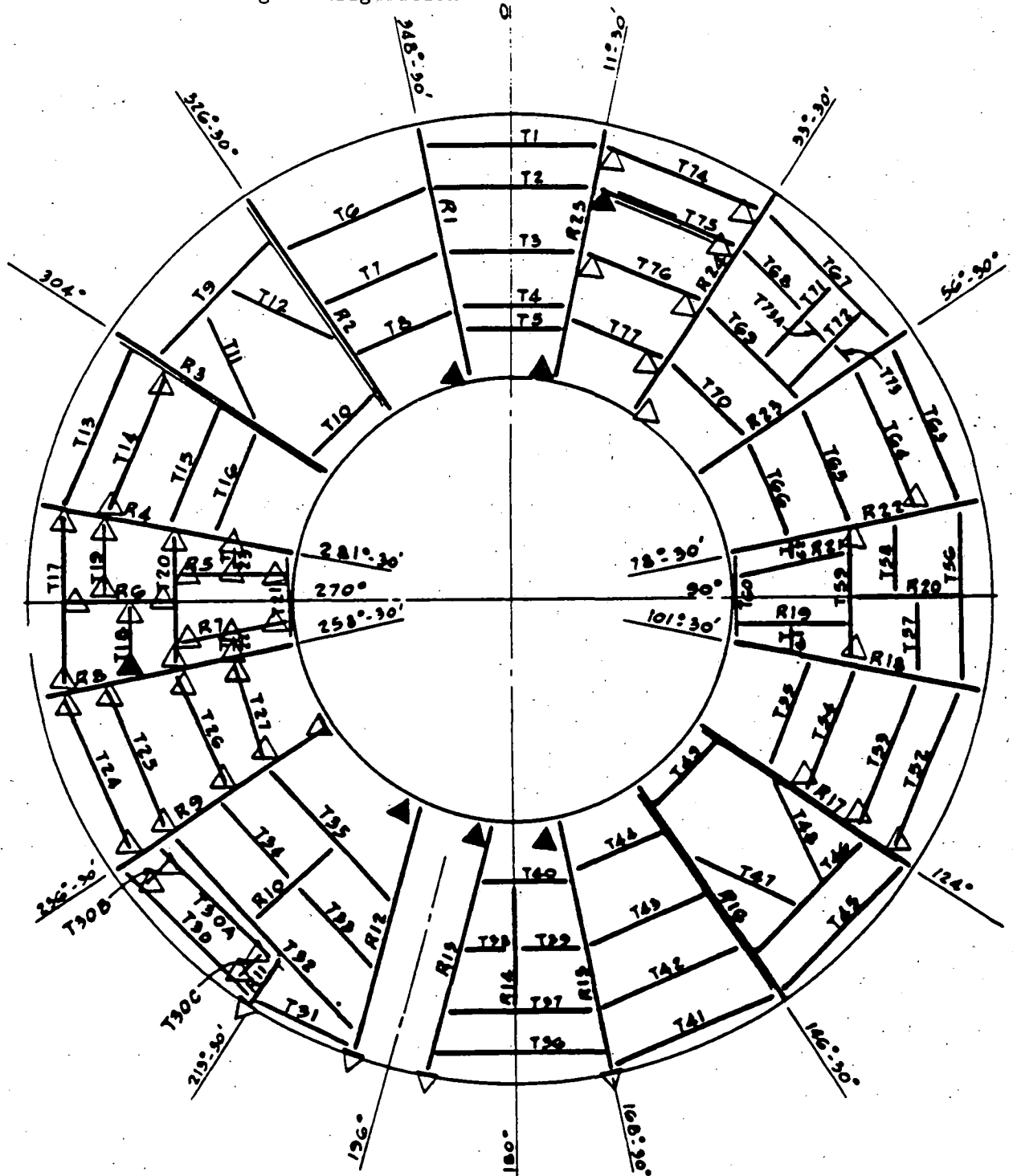


FIGURE 1

FRAMING PLAN AT EL 515'-4 1/2'
DRESDEN UNIT 3

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▲ = Connection Differs From Configuration

△ = No Deficiencies

* = Does Not Meet FSAR

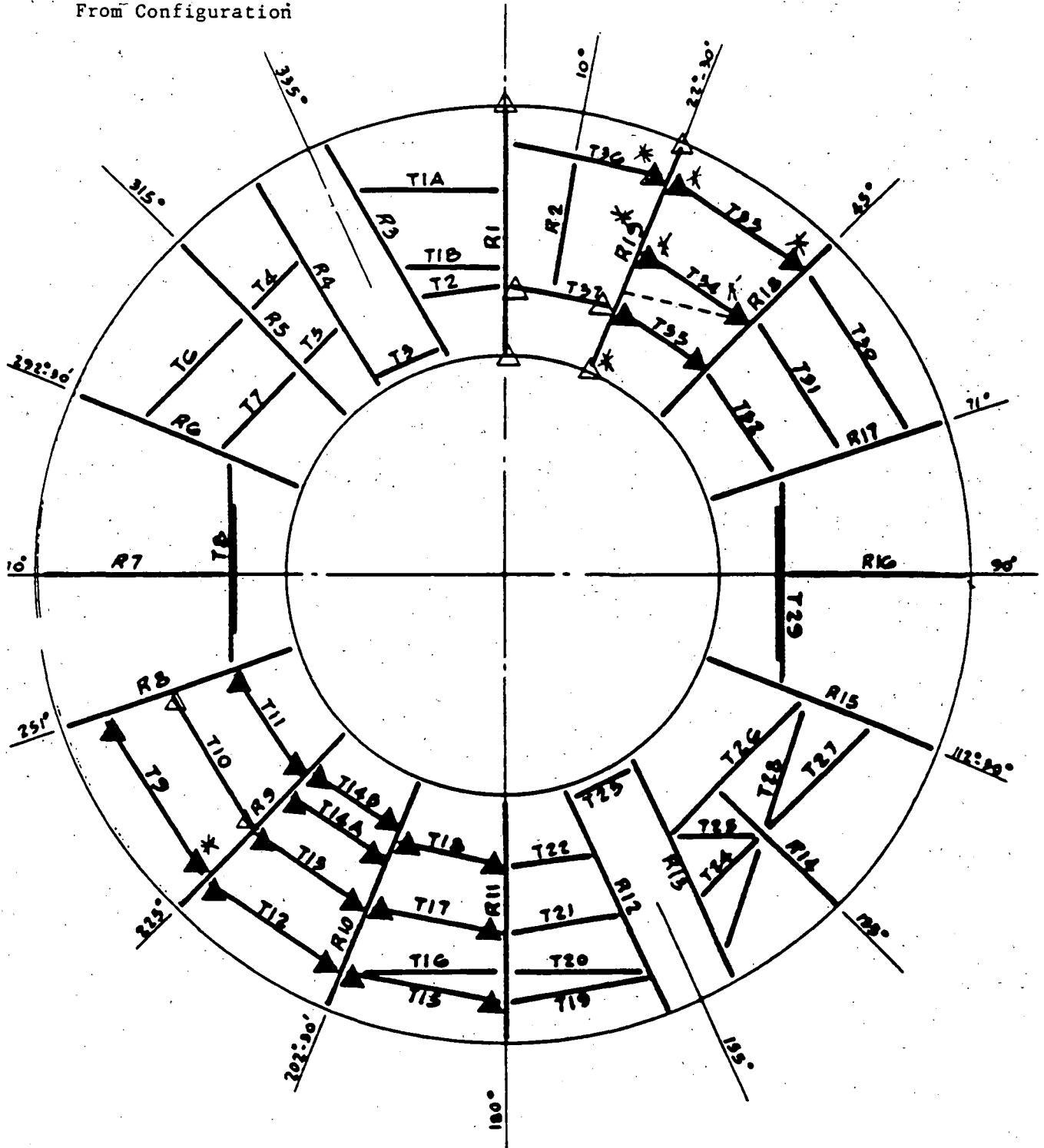


FIGURE 2

FRAMING PLAN AT EL. 597.0'



Commonwealth Edison

Dresden Nuclear Power Station

R.R. #1

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August 1, 1988

EDE LTR #88-572

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Licensee Event Report #87-005-3, Docket #050249 is being submitted as required by Technical Specification 6.6, NUREG 1022 and 10 CFR 50.73(a)(2)(ii). This revised report is submitted to provide the results of further primary containment structural steel inspections which were performed during the recent Dresden Unit 3 refuel outage.

E.D. Eenigenburg
Station Manager
Dresden Nuclear Power Station

EDE/jmt

Enclosure

cc: A. Bert Davis, Regional Administrator, Region III
File/NRC
File/Numerical

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