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Nuclear Generation

July 22, 1988  
JPN-88-035

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Mail Station P1-137  
Washington, D.C. 20555

SUBJECT:

James A. FitzPatrick Nuclear Power Plant  
Docket No. 50-333  
Application of ASME Code Case to Plant Modifications

References:

1. ASME Code Case N-236-1 "Repair and Replacement of Class MC Vessels Section XI, Division 1."
2. NYPA letter, J. P. Bayne to T. A. Ippolito (NRC), JPN-81-95, dated November 25, 1981.

Dear Sir:

The Authority intends to apply the provisions of ASME Code Case N-236-1 (Reference 1) to three modifications planned for installation during the FitzPatrick 1988 refueling outage. Application of section 2222, "Deferral of Leakage Tests," allows the installation of the modifications without having to perform a leakage test as would otherwise be required by the plant Technical Specifications and 10 CFR 50 Appendix J.

ASME Code Case N-236-1 states that leakage tests for welds attaching penetrations one inch diameter or smaller may be deferred until the next scheduled leakage test. For several welds associated with three modifications, the applicable leakage test is the Type A Primary Containment Integrated Leakage Rate Test (PCILRT). The Authority is not planning to perform a PCILRT during the 1988 refueling outage. It is impractical to schedule the PCILRT solely to test these welds. Normally, modifications of this type would receive a Type C Local Leak Rate Test (LLRT). However, these particular welds cannot be isolated from the Primary Containment as is necessary to perform an LLRT.

The next PCILRT is scheduled to be conducted during the 1990 refueling outage. The integrity of the welds over one operating cycle is assured by visual and dye penetrant examinations conducted during installation. Delaying the leakage test by one cycle does not result in a significant reduction in any margin of safety.

The Authority previously applied this Code Case to modifications performed at FitzPatrick (Reference 2). Since that time, the Code Case was endorsed by the NRC in Regulatory Guide 1.147 and issued as part of the ASME Code. The Authority will amend the Final Safety Analysis Report to describe the application of this Code Case

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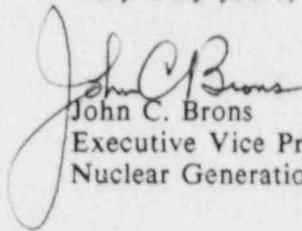
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to the FitzPatrick plant. This will allow application of the Code Case to future plant modifications without notifying the NRC on a case by case basis.

Attachment I describes the three modifications and evaluates the applicability of the ASME Code Case to the modifications. Drawings of the modifications and affected penetrations are enclosed as Attachment II.

Should you or your staff have any questions regarding this matter, please contact Mr. J. A. Gray, Jr. of my staff.

Very truly yours,



John C. Brons  
Executive Vice President  
Nuclear Generation

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NEW YORK POWER AUTHORITY  
James A. FitzPatrick Nuclear Power Plant  
Docket No. 50-333

Attachment I to JPN-88-035

JUSTIFICATION FOR DEFERRAL OF LEAKAGE TESTING FOR  
REACTOR WATER LEVEL AND CONTAINMENT SPRAY MODIFICATIONS

Three modifications are planned for installation during the 1988 refueling outage for which local leakage testing of certain welds, forming part of the primary containment pressure boundary, is impractical. The applicable leakage test for these welds is the Type A Primary Containment Integrated Leakage Rate Test (PCILRT). The Authority is not planning to perform a PCILRT during the 1988 refueling outage. It is impractical to schedule the PCILRT solely to test these welds. Visual and dye penetrant examination will be performed on each of the welds.

DESCRIPTION OF MODIFICATIONS

REACTOR WATER LEVEL

The reactor vessel water level instrumentation system is being modified to comply with NRC Generic Letter 84-23 and Regulatory Guide 1.97 Revision 2. This modification will reduce reactor water level indication errors caused by containment heat-up during postulated accident sequences and improve the reliability of the instrumentation system. A detailed description of the modification is contained in Reference 6\* and is shown in Attachment II, drawing 1.

As part of this modification, a 1 inch NPS pipe will be routed through each of existing penetrations X-26A and X-26B. These penetrations consist of 18 inch containment purge piping. The instrument lines enter the purge piping inside the containment and exit the pipe outside containment, upstream of the first purge isolation valve. The Code Case is to be applied to welds located where the instrument line penetrates the 18 inch purge pipe (see Attachment II, Drawings 2 and 3). This configuration is similar to three existing containment atmosphere monitoring lines which are also routed through penetration X-26A (Reference 7).

CONTAINMENT SPRAY

The containment spray system is also being modified to comply with Regulatory Guide 1.97. This modification adds instrumentation to allow control room and process computer indication of containment spray flow rates. A description of the modification is contained in Reference 8 and is shown in Attachment II, drawings 4 and 5.

As part of this modification, flow instruments will be installed in the 6 inch torus spray piping between containment penetrations X-211A and X-211B and the inboard containment isolation valves 10-MOV-38A and 10-MOV-38B. The Code Case is to be applied to the installation of the flow instrument. Attachment II, drawing 6 shows the flow instrument and its installation into the torus spray piping.

\* Reference numbers refer to the list of references contained in this attachment.

## CONTAINMENT ATMOSPHERE MONITOR MODIFICATION

The piping which returns the CAM samples to the torus through penetrations X-203A and X-203B are being modified as a result of removing the Beckman hydrogen and oxygen analyzers, DWA-PA and DWA-PB. FitzPatrick modification F1-87-045 entails deleting the return line and capping the connection to the torus return line. The caps are one inch or smaller in diameter and will be located on a portion of piping that cannot be isolated from the primary containment.

The existing piping configuration is shown in FSAR figures 5.2-9, sheet 3 (Reference 7). The modified piping configuration is shown in Attachment II, Drawing 7.

- X-203A - A branch line, shown in Attachment II, Drawing 7 as being near manual valve 201, is being cut and capped. The Code Case is applied to the cap.
- X-203B - A branch line, shown in Attachment II, Drawing 7 as being between manual valves 114 and 203, is being cut and capped. The Code Case is applied to the cap.

*A cloud is shown in Attachment II Drawing 7 to indicate where that Code Case is being applied.*

## DISCUSSION OF APPLICABILITY OF ASME CODE CASE

The FitzPatrick Technical Specifications, Section 4.7.A.2.f (Reference 1), specify leakage testing requirements for containment modifications. The requirements of the Technical Specifications are identical to the requirements of 10 CFR 50 Appendix J, Section IV.A, "Special Testing Requirements" (Reference 2). The Technical Specifications (and Appendix J) make a distinction between major and minor modifications, but provide no guidance in defining the terms "major" and "minor."

The ASME Boiler & Pressure Vessel code frequently distinguishes certain repairs, replacements or modifications as minor by providing relaxed NDT requirements (e.g. Exemption from Hydrostatic Testing or Volumetric Exam). The ASME Boiler & Pressure Vessel Code further addressed the terms "major" and "minor" in January, 1979, and their applicability to the leakage testing requirements of 10 CFR 50 Appendix J, via Code Case N-236 (Reference 3). This Code Case specifies that welds attaching penetrations that are 1 inch NPS or smaller are considered "minor" modifications and that leakage tests of "minor" modifications may be deferred until the next scheduled leakage test, provided that all other required NDE is performed. The Code Case was specifically intended for Class MC components, and cites the requirements of 10 CFR 50 Appendix J, Section IV.A, as supporting documentation.

The Code Case was subsequently endorsed by the NRC in Regulatory Guide 1.147, Revision 3 (Reference 4) and issued as part of the ASME Code in Section XI, IWE-5000 (Reference 5) in 1983. The case was reaffirmed and reissued as N-236-1 in September 1985 with some revisions.

The portions of containment being modified at FitzPatrick are not defined as "MC" components. However, the applicability of 10 CFR 50 Appendix J is clear. The lack of guidance in Appendix J concerning the terms "major" and "minor," combined with the fact that Type B testing (gasketed joints) and Type C testing (isolation valves) do not apply to these modifications, makes it necessary to consult additional resources. The Class "MC" Code Case provides a reliable source of information which has been

endorsed by the Commission, and is therefore a valid source for determining the testing requirements for containment modifications to ANSI B31.1 components.

The connections in question are 1 inch NPS and therefore meet the criteria of minor modifications. The deferral of Type A leakage testing is justified based on these modifications being considered "minor" and the determination provided in Code Case N-236-1 and endorsed by the NRC in Regulatory Guide 1.147.

#### REFERENCES

- 1) FitzPatrick Nuclear Power Plant Technical Specifications through Amendment No. 114; Section 4.7.A.2.f.
- 2) 10 CFR 50, Appendix J, Section IV.A.
- 3) ASME Code Case N-236 (and N-236-1).
- 4) Regulatory Guide 1.147, Rev. 3.
- 5) ASME XI, IWE-5000, 1983 Edition.
- 6) Letter, J.C. Brons (NYPA) to NRC, JPN-87-033, dated June 9, 1987, concerning implementation of NRC Generic Letter 84-23.
- 7) James A. FitzPatrick Updated Final Safety Analysis Report, Figure No. 5.2-9.
- 8) Letter, C.A. McNeill Jr. (NYPA) to D.B. Vassallo (NRC), JPN-84-77, dated November 30, 1984, Attachment I section 4.7, concerning implementation of Regulatory Guide 1.97.
- 9) Letter, C.A. McNeill Jr. (NYPA) to D.B. Vassallo (NRC), JPN-84-77, dated November 30, 1984, Attachment I section 4.6, concerning implementation of Regulatory Guide 1.97.

ATTACHMENT II TO JPN-88-035

REACTOR WATER LEVEL AND CONTAINMENT SPRAY  
MODIFICATIONS DRAWINGS

Contents

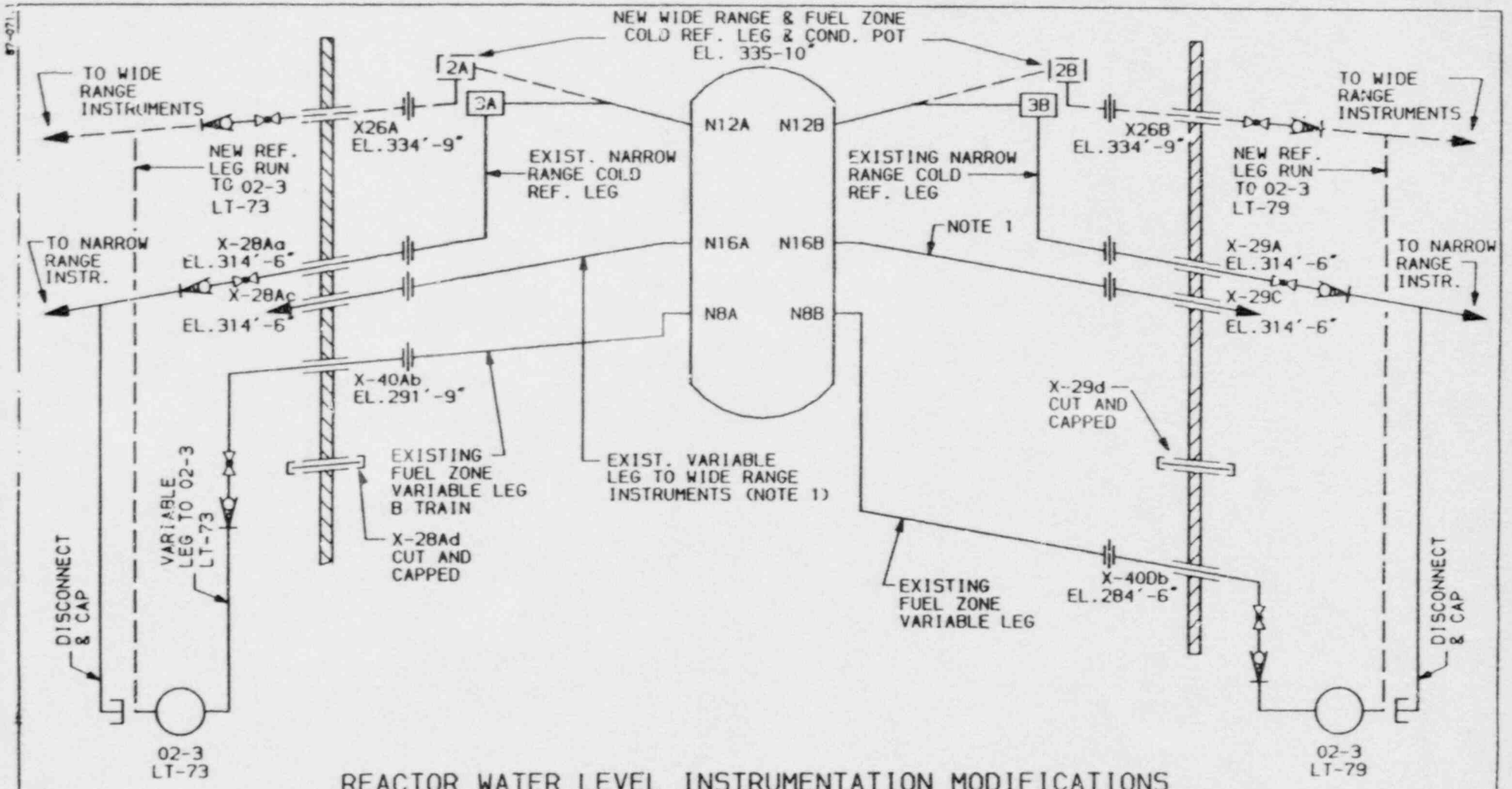
- Drawing 1 - REACTOR WATER LEVEL INSTRUMENTATION  
MODIFICATIONS
- Drawing 2 - REACTOR VESSEL LEVEL PENETRATION DETAIL  
MODIFICATION NO. F1-87-014, Sheet 1 of 2
- Drawing 3 - REACTOR VESSEL LEVEL PENETRATION DETAIL  
MODIFICATION NO. F1-87-014, Sheet 2 of 2
- Drawing 4 - SYSTEM BLOCK DIAGRAM - DRYWELL/TORUS SPRAY  
FLOW, MODIFICATION NO. F1-87-048, SK-87-048-1
- Drawing 5 - SYSTEM BLOCK DIAGRAM - DRYWELL/TORUS SPRAY  
FLOW, MODIFICATION NO. F1-87-048, SK-87-048-2
- Drawing 6 - ANNUBAR MODEL ANF-76
- Drawing 7 - CONTAINMENT ATMOSPHERE MODIFICATIONS,  
MODIFICATION NO. F1-87-045

New York Power Authority

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

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DPR-59



**REACTOR WATER LEVEL INSTRUMENTATION MODIFICATIONS**

**FIGURE 1**

**NOTES**

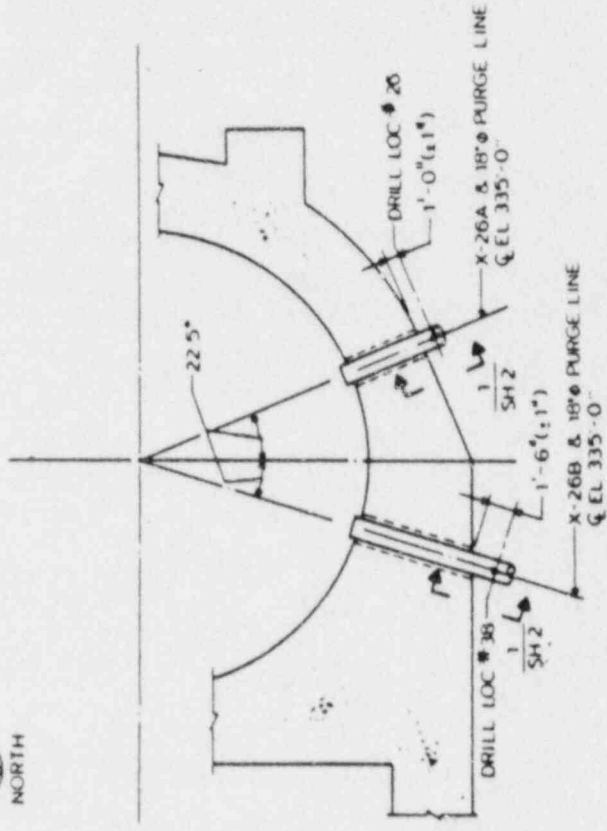
1. THE EXISTING WIDE RANGE VARIABLE LEGS WILL HAVE TO BE DISCONNECTED FROM THE YARWAY COLUMNS. THEY EXIT THE DRYWELL AT THE SAME PENETRATION AS PREVIOUSLY.

- EXISTING TUBING
- - - - - NEW COLD REFERENCE LEG MODIFICATIONS

BILL OF MATERIALS			
NO	QTY	DESCRIPTION	REMARKS
1	1	1" HALF COUPLING (6000) JA1B2-F 304	SEE DET B

**NOTES**

- PRIOR TO INSTALLATION, THE FIELD SHALL VERIFY THAT THE NEW PENETRATION IS LOCATED A MINIMUM OF 3" DOWNSTREAM FROM THE X-26 CONNECTING WELD.

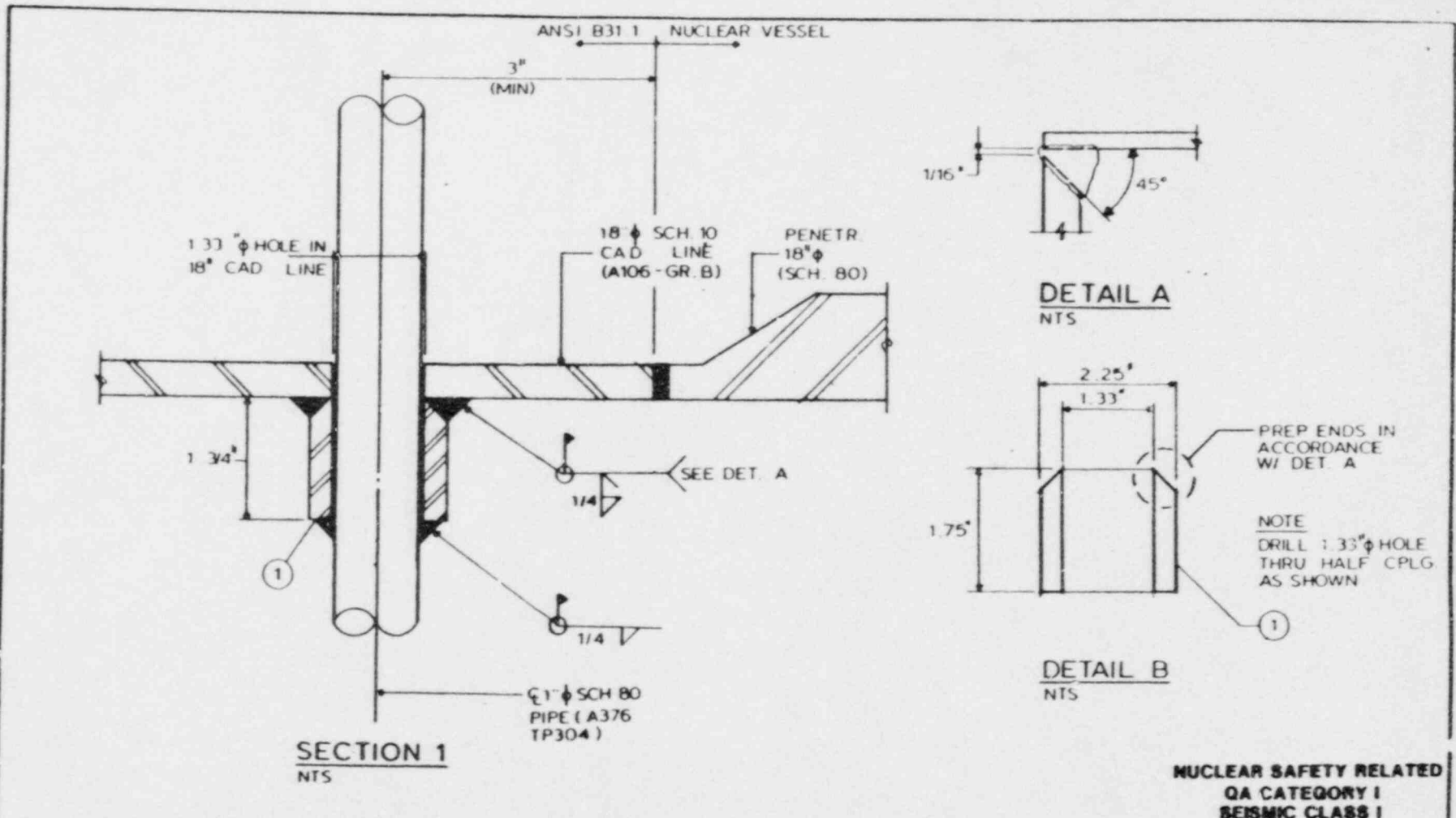


**KEY PLAN**  
NO SCALE

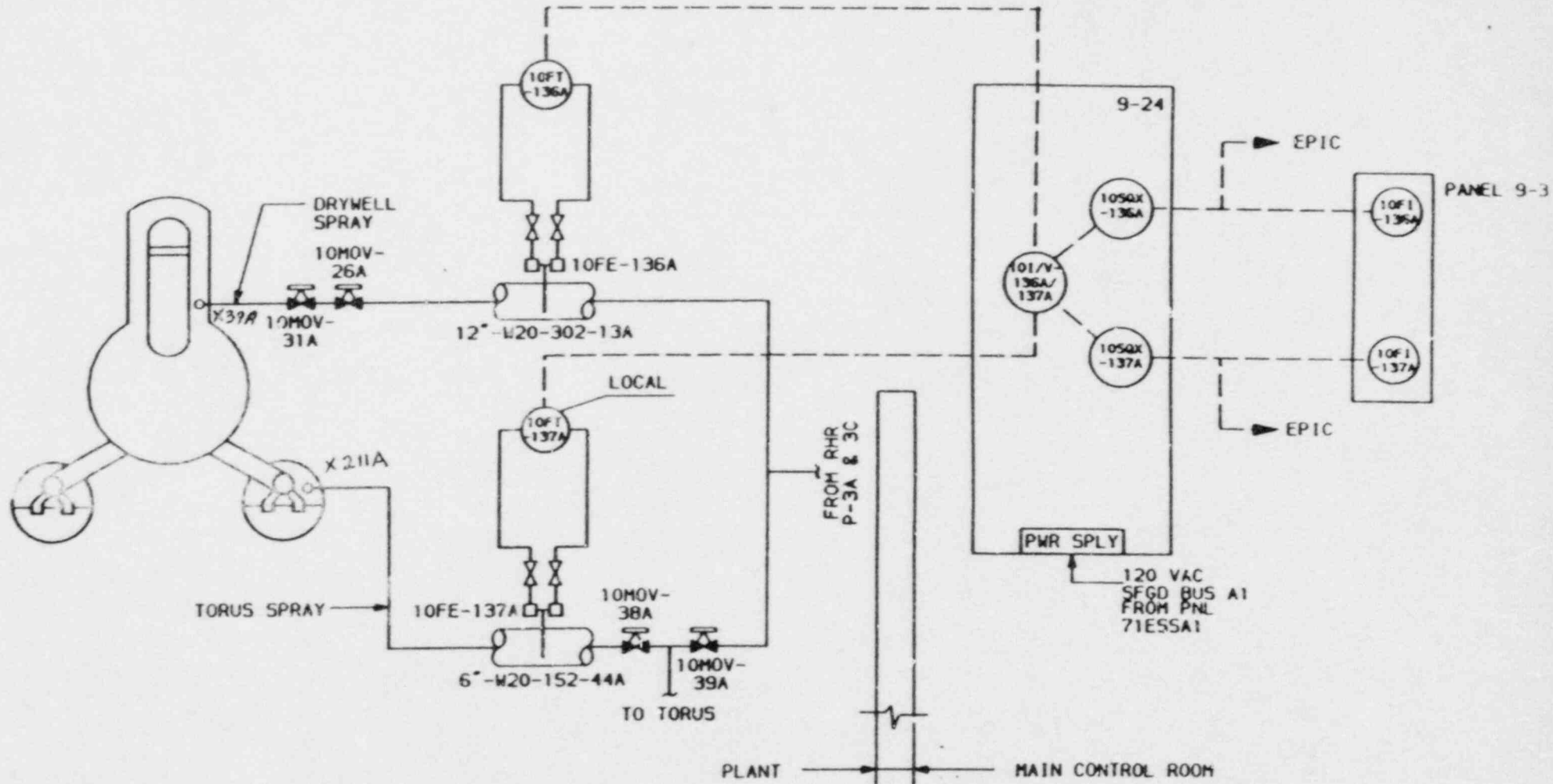
**NUCLEAR SAFETY RELATED**  
**QA CATEGORY 1**  
**BEROMC CLASS 1**

CYGNA	<b>CYGNA ENERGY SERVICES</b>		TITLE	REACTOR VESSEL LEVEL PENETRATION DETAIL
	PROJECT	JAMES A FITZPATRICK	JOB NO.	87145
CLIENT	NEW YORK POWER AUTHORITY	CONSTRUCTION ISSUE FOR	PK-87-014	SK-F1-87-014-005
		DATE	11/15/87	SH 1 OF 2
		REV		OA





<b>CYGNA ENERGY SERVICES</b>						TITLE		REACTOR VESSEL LEVEL PENETRATION DETAIL MOD NO F1-87-014	
PROJECT	JAMES A FITZPATRICK					JOB NO.	DWG. NO.	REV	
CLIENT	NEW YORK POWER AUTHORITY	QA	CONSTRUCTION ISSUE FOR F1-87-014	BY	1/14/87	87145	SK-F1-87-014-005	S4 2 OF 2	QA
		NO	REVISION	BY	DOB APP 87				

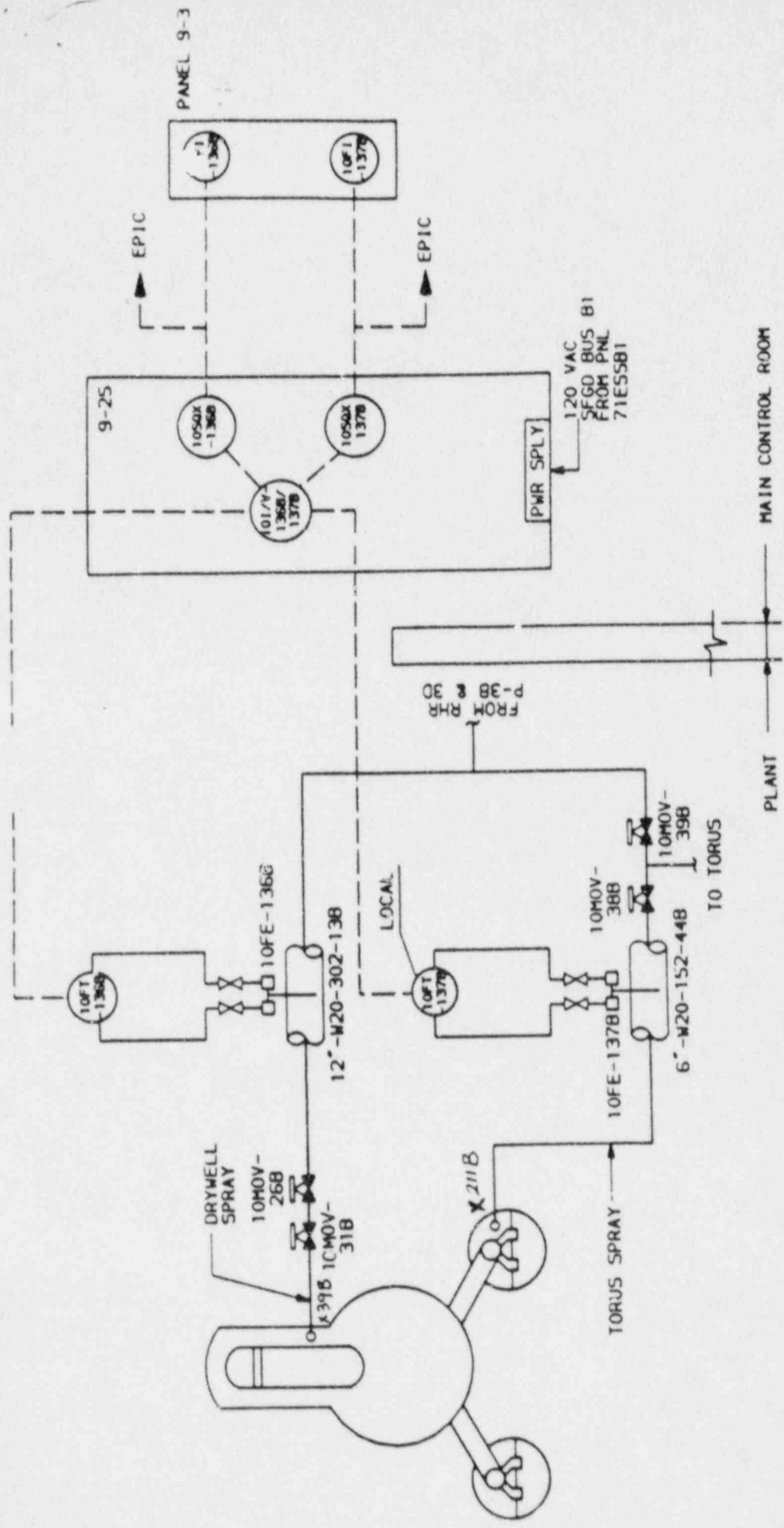


**CYGNA ENERGY SERVICES**  
 286 CONGRESS STREET BOSTON MA 02210

PROJECT JAMES A. FITZPATRICK  
 CLIENT NEW YORK POWER AUTHORITY

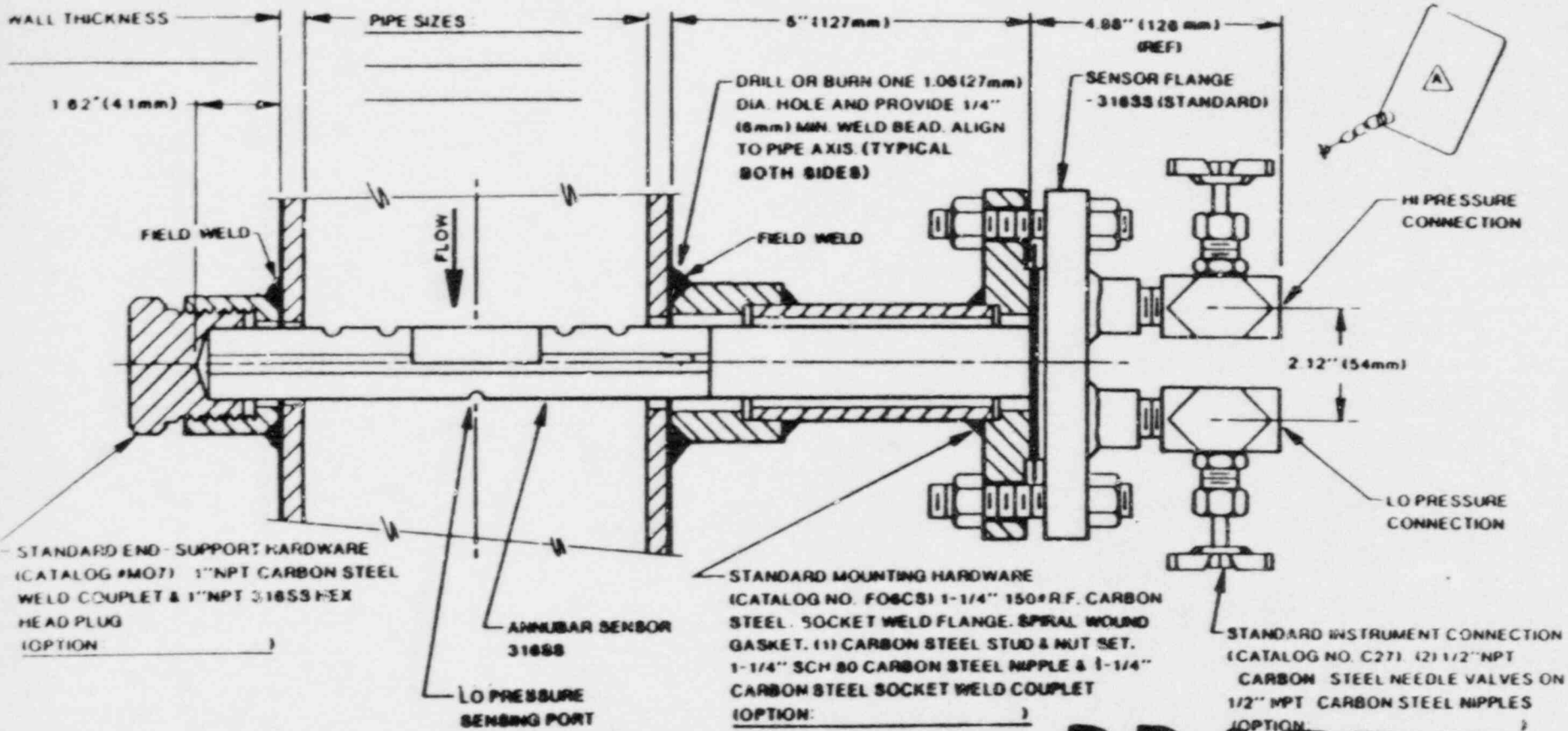
NO	REVISION	BY	CHKD	APPD	DATE
0	ORIGINAL ISSUE				

TITLE		
SYSTEM BLOCK DIAGRAM DRYWELL/TORUS SPRAY FLOW MODIFICATION NO. Fi-87-048		
JOB NO	DWG NO	REV
87141	SK-87-048-1	0



SYGNA	CNA ENERGY SERVICES 200 CONGRESS STREET BOSTON MA 02210		SYSTEM BLOCK DIAGRAM DRYWELL/TORUS SPRAY FLOW MODIFICATION NO. F1-87-048	
	PROJECT	JAMES A. FITZPATRICK	JOB NO	086 NO
CLIENT	NEW YORK POWER AUTHORITY	BY	CHKD	APPRD
		DATE	DATE	DATE
		ORIGINAL ISSUE	REVISION	
		0	NO	
		87141	SK-87-048-2	0

PLANT  
TO TORUS  
MAIN CONTROL ROOM



# DRAFT

**NOTES**  
 'A' PERMANENT RUSTPROOF METAL TAG SHOWING MODEL No., PIPE SIZE, SERIAL No. AND INFORMATION AS SUPPLIED BY CUSTOMER, I.e. TAG No., DESIGN FLOWS/METER READINGS

CUSTOMER	P.O. NO.:
LOCATION	INV:
PIPE SIZE:	SCHEDULE:
PIPE I.D.:	PIPE O.D.:
OPTIONS - MOUNTING HARDWARE:	
INSTRUMENT FITTINGS:	
TAG NO.	
NOTES	

British Standard Corporation - Subsidiary of **ICI** Corporation  
 Dev 8888 - Boulder, Colorado 80501 USA

**ANNUBAR MODEL ANF-76**

APPROVAL		LATEST REVISION	
By <i>[Signature]</i>	Date 7/27/80	Rev "B"	Date 1/27/82
Drawn by <i>[Signature]</i>	Checked by <i>[Signature]</i>	Date Drawn 27 Nov 80	Scale N.T.S.

C-5000

CONTAINMENT ATMOSPHERE MONITOR  
 MODIFICATIONS  
 F1-87-045

