

# CATEGORY 1

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ACCESSION NBR: 9801200156      DOC. DATE: 98/01/10      NOTARIZED: NO      DOCKET #  
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SUBJECT: Provides info requested by NRC during 971219 telcon re containment construction hatch removal/replacement.

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January 10, 1998

L-97-328  
10 CFR 50.4

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
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RE: St. Lucie Unit 1  
Docket No. 50-335  
NRC Requested Information  
Containment Construction Hatch Removal/Replacement

The purpose of this letter is to provide information requested by the NRC during a telephone conference call between the NRC NRR staff and Florida Power & Light Company (FPL) on December 19, 1997. The containment construction hatch design and testing were described in FPL letter L-97-287 dated November 7, 1997. During the December 19, 1997 phone call, the NRC had questions on the weld fit up, weld configuration, and the construction methods used to support the containment construction hatch cover during the removal and replacement.

The questions and the responses are attached.

Very truly yours,

J. A. Stall  
Vice President  
St. Lucie Plant

JAS/GRM

cc: Regional Administrator, Region II, USNRC  
Senior Resident Inspector, USNRC, St. Lucie Plant

*Handwritten: A001/1*

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**NRC Question 1:**

**What fit up and weld configuration inspections were conducted to ensure that the weld joint was in accordance with the existing design, and ASME Code requirements?**

**FPL Response:**

As described in FPL letter L-97-287 dated November 7, 1997, the St. Lucie Unit 1 containment is a free standing cylindrical carbon steel vessel with a hemispherical dome (Figure 1). The construction hatch consists of a twenty-eight foot (inside diameter) reinforced penetration in the steel containment shell. An ellipsoidal cap is butt welded to the penetration barrel on the inside of the containment. To open the construction hatch, the existing full penetration butt weld between the penetration barrel and the hatch cover was thermally cut.

To reinstall the cap, new weld surfaces were prepared by grinding on the cap and the penetration barrel. As part of the work package instructions, coatings were removed, where required and the surfaces were visually inspected. The inspection included dimensional checks, profile, fit up (high/low), and root gap, and found to be within the criteria specified in ASME Section III and the FPL Weld Control Program. In addition, a magnetic particle surface examination (MT) was performed on both surfaces prior to welding in accordance with ASME Section III.

After completion of the root pass and the welding on the inside of the containment (from the outside diameter), the root was back gouged and visual (VT) and magnetic particle (MT) examinations were performed prior to final welding. Upon completion of the welding outside of the containment (from the inside diameter), final visual (VT), magnetic particle (MT), and radiography (RT) examinations will be performed.

**NRC Question 2:**

**What construction methods were used to temporarily support the construction hatch cover during cutting, machining, and welding?**

**FPL Response:**

To remove the hatch cover, the butt weld between the hatch cover and the penetration barrel was thermally cut for most of the circumference, leaving 4 tabs. The length of the cut tabs was determined by calculation to not over stress the penetration barrel or hatch cover material, with an adequate factor of safety. The hatch cover was then rigged using

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the existing lifting lugs, a spreader beam, and the containment polar crane. The lifting lugs were installed during original construction and are located directly above the center of gravity of the ellipsoidal hatch cover. (Figure 2)

After installing the rigging and dunnage underneath the hatch cover, and shimming the gap to prevent any damage, the four support cut tabs were thermally cut. The hatch cover was then moved to, and suspended from, its support brackets on the containment wall, which were also installed during the original construction of St. Lucie Unit 1.

Upon completion of the steam generator replacement activities, the hatch cover was rigged using the spreader beam and the polar crane and moved to the penetration barrel. Five temporary alignment lugs were utilized to ensure proper alignment and wooden wedges were used to establish the proper root gap. Once the proper alignment was inspected, the root tacks (approximately 1/2 inch deep by 12 inches long at 90 degree intervals) were welded. The rigging remained in place until four root tacks were completed. The size of the root tacks was sufficient to withstand the loading with no adverse affect on the existing base metal. The rigging was then removed and the final weld out completed.

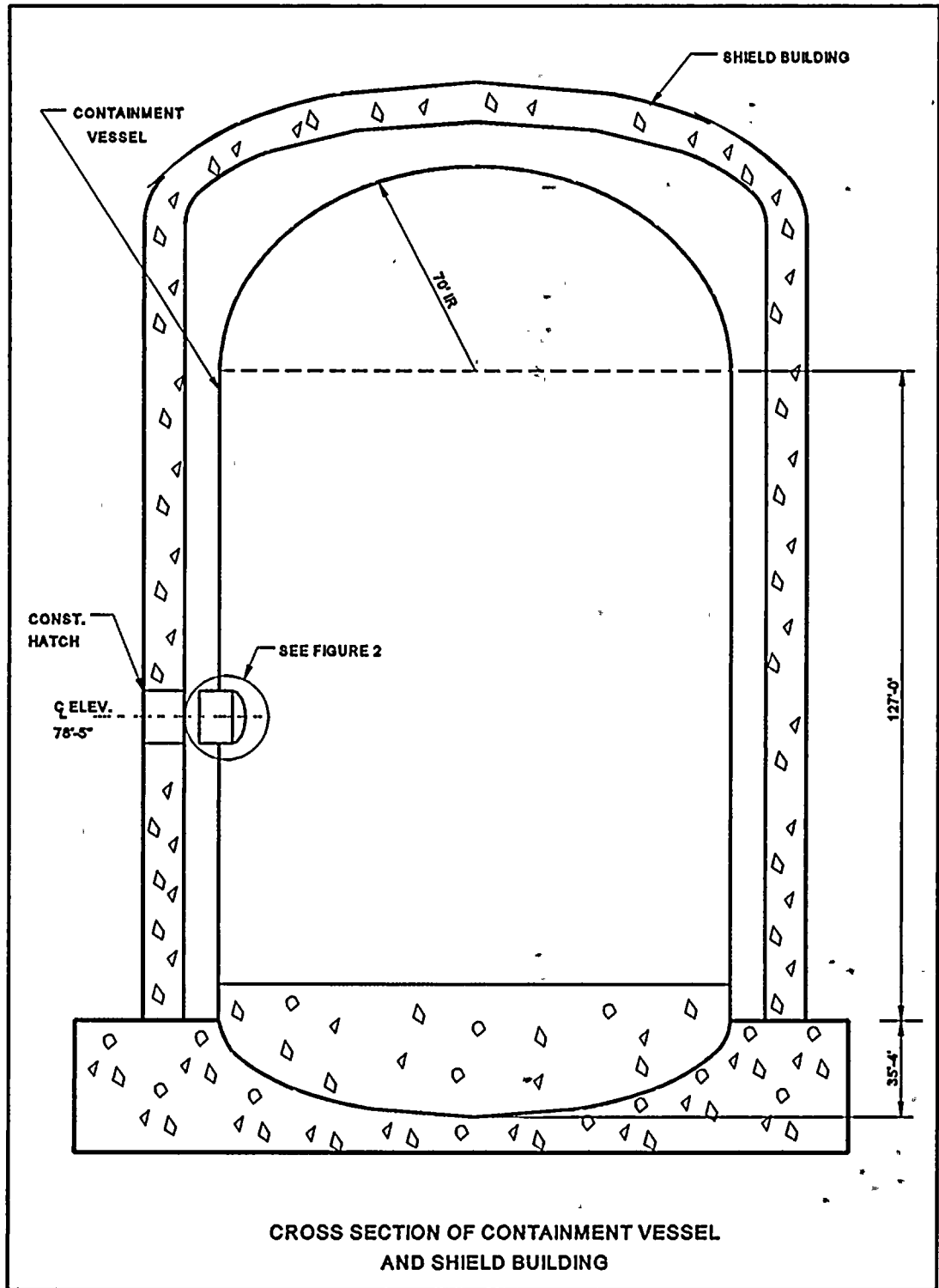


Figure 1

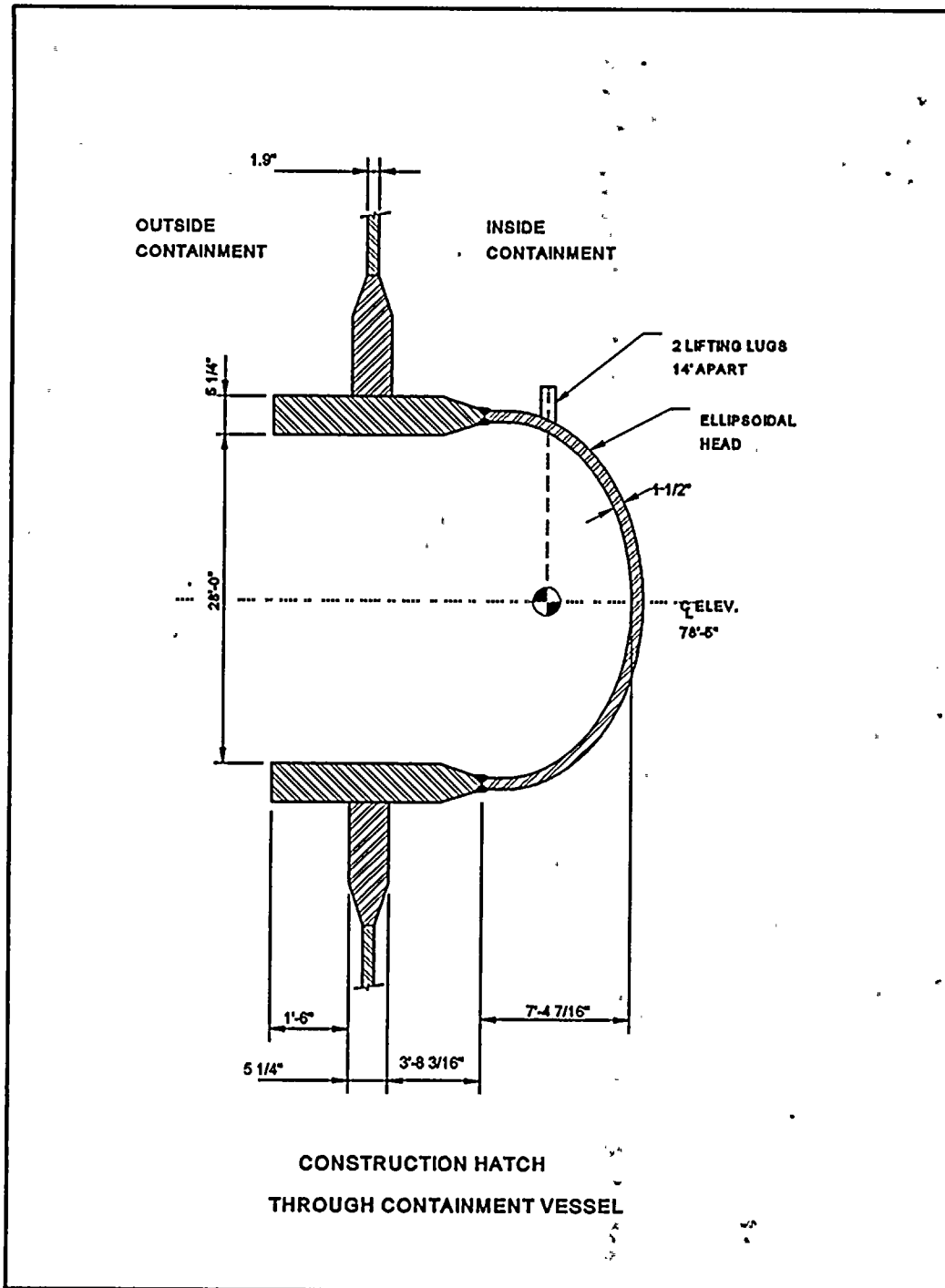


Figure 2

