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November 21, 1984  
RBG-19,489  
File No. G9.5, G9.8.6.2

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dear Mr. Denton:

River Bend Station-Unit 1  
Docket No. 50-458

A revision to FSAR Section 3.8.2.7.1.1 regarding the initial structural acceptance test of the containment vessel is enclosed for your information. This revision will be included in a future amendment.

Sincerely,

J. E. Booker  
Manager-Engineering,  
Nuclear Fuels & Licensing  
River Bend Nuclear Group

JEB/WJR/ERG/kt

*Booker*  
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## ENCLOSURE 1

### Additional Discussion

RBS complies with ASME Section III NE-6000 for the structural proof test of the containment with the minor exception that only major discontinuities and regions of high stress will be examined. The bases for not examining all weld joints in the steel containment include the following:

- a. Stresses in the containment due to 17.25 psi internal test pressure are fairly small compared to allowable stresses in the material, except for the stresses in the knuckle area (see Page 2 of this enclosure).
- b. The peak accident pressure due to LOCA is determined to be 6 psi, therefore stresses in the weld joints due to LOCA pressure are even smaller (less than 44% of stresses shown in Page 2 of this enclosure).
- c. All containment welds subject to inspection during the pressure test have been volumetrically examined by either radiography or ultrasonics.

The major discontinuities are defined in the FSAR revision.

The acceptance criteria is specified as no indication of leakage or structural abnormalities such as bulges, weld distortions or wrinkles.

Approximately 2800 linear feet of weld will be subjected to inspection in addition to the 1912 feet previously vacuum box tested. The total percentage of welds to be tested is 29%.

ENCLOSURE 1

STRESSES IN STEEL CONTAINMENT  
 UNDER TEST CONDITIONS  
 (Pt = 17.25 psig)

LOCATION	MEMBRANE STRESS (ksi)	MEMBRANE & BENDING STRESS (ksi)	MAX %
Dome	7.57	14.51	30.5
Dome-Knuckle	12.58	15.3	38.9
Knuckle	19.21	25.39	59.5
Knuckle-Cylinder	4.14	4.14	12.8
Cylinder (Polar Crane)	5.23	10.6	22.3
Cylinder	8.76	9.06	27.1
Cylinder @ 158'	4.85	10.41	21.9
Cylinder-Concrete Fill	4.14	15.68	33.0

NOTES:

1. The membrane stress allowable is 32.3 ksi.
2. The membrane and bending stress allowable is 47.5 ksi.

## ENCLOSURE 2

### 3.8.2.7.1 Containment Vessel

#### 3.8.2.7.1.1 Testing

##### Structural Acceptance Test

The containment vessel is subjected to a pressure test in accordance with the requirements of Subsection NE-6300 of ASME III, July 1, 1974, Edition. The containment vessel is not code stamped and therefore witnessing by an authorized nuclear inspector is not required.

Prior to performing the pressure test, the following requirements are required to be completed to ensure structural integrity:

1. The containment vessel floor liner plate seam welds are pressure tested to 20 psig using the leak chase channel system.
2. The containment vessel seam welds are volumetrically examined by either radiography or ultrasonic methods in accordance with ASME III, Subsection NE-5000.
3. The containment vessel seam welds in the concrete fill area are vacuum box tested prior to being embedded in concrete.

The containment vessel is internally pressurized in levels up to a test pressure of 1.15 times the design pressure and then depressurized to the design pressure. At the design pressure, the containment vessel weld joints are examined for leakage at major discontinuities and all regions of high stress. Any leaks detected are repaired and the containment vessel is retested as described below.

The major discontinuities are defined as follows:

- a. Welds around all penetrations.
- b. Welds around air locks, hatches, fuel transfer tube and CR7.
- c. Welds around thickness transition region of the main steam plate.
- d. Horizontal weld joint at top of the concrete fill (E1.95'-0).

The regions of high stress are defined as weld joints and areas with stresses more than 50% of the allowable stress under the test condition. The pressure test is intended to uncover any evidence of structural deterioration which may affect either the containment structural integrity or leak-tightness. Detection of weld joint leakage will

require the containment vessel to be retested by examining weld joints which are stressed more than 33% of the allowable stress, including the repaired areas. If any additional leaks are found during the retest, all remaining unexamined weld joints will be examined, repaired if required, and retested prior to conducting Appendix J, type A leakage test.