EXHIBIT VII - REACTOR VESSEL MATERIAL SURVEILLANCE PROGRAM

The surveillance program for Peach Bottom Units 2 and 3 is the standard surveillance program described in the GE-APED Topical Report, NEDO-10115, "Mechanical Property Surveillance of General Electric BWR Vessels." This surveillance program does not conform to ASTM E-185-66, "Recommended Practice for Surveillance Tests on Structural Materials in Nuclear Reactors," or its revision ASTM E-185-70, "Recommended Practice for Surveillance Tests for Nuclear Reactor Vessels."

The following is a comparison of the surveillance program to the applicable portions of ASTM E-185-70 (paragraph numbers correspond to paragraph numbers in ASTM E-185-70):

3.1 Test Material

The test specimens are taken from a plate sample of the same heat as the wall plates in the reactor core region. The sample plate is welded with the same material and by the same procedure as a butt weld in the core region.

3.1.1 Fabrication History

The test panel represents all of the fabrication processes to which the vessel plate is subjected except for forming. Since the vessel plate was quenched and tempered after forming, the forming operation has no effect on the part properties.

3.1.2 Test Specimens

Test specimens are taken from the test plate to represent the base metal, heat-affected zone (HAZ), and weld material. The plate material is not tested before selection since this pretesting would impose a large material and test cost on the surveillance program. The weld procedures and materials duplicate actual fabrication. The specimens are located vertically in the highest fluence area. Circumferentially, the specimens are located where access dictates, not necessarily at the highest fluence. One extra base line set of specimens has been retained as spares. All specimens are identified and complete documentation is available.

3.1.3 Chemical Composition

Since specimens are taken from each heat of actual plate material, chemical analysis of this material is on record.

3.2 Type of Specimens

The surveillance test specimens conform to ASTM E-185-70 requirements, except that the HAZ impacts have the notch at the fusion line instead of 1/32 in away. The weld material tensile specimen is oriented parallel to the weld. All other specimens are oriented parallel to the plate rolling direction, transverse to the weld. The impact notch is perpendicular to the plate surface.

3.3 Number of Specimens

The following sets of test specimens have been retained. There are equal numbers of base metal, HAZ's and weld specimens:

	Impact	Tensile
Base Line	36	9
Irradiated Sets		
1	36	6
2	24	6
3	24	6
Spares	36	9
TOTAL	156	36

The program is based on 12 impacts per test set since experience indicates that this quantity is adequate.

3.4 Correlation Monitors

Correlation monitors are not used since this is a surveillance program, not a research and development program.

4.1 Location of Specimens

The specimens are located as close as possible to the zone of highest fluence. The test plate duplicates the vessel material, and the specimens are placed as close

as practical to the vessel wall to best duplicate the vessel wall conditions.

4.2 Accelerated or Reduced Irradiation

Accelerated exposures are not used.

4.3 Thermal Control Specimens

Themal controls were part of earlier test programs and have discontinued.

4.4 Test Capsules

The BWR is a constant temperature system, so no monitoring is employed. The specimens are hermetically sealed in an inert gas environment in a thin wall stainless steel capsule which is not buoyant and does not present any problems in removing the irradiated capsules. All specimens are encapsulated in tight containers, and tensile specimens have aluminum spacers to keep gamma heating as close as possible to vessel wall conditions. The vessel design does not have provision for later insertion of surveillance material. Sample containers can be withdrawn but not replaced.

4.5 Corrosion-Resistant Reactor Vessel Materials

The vessel wall and all test specimens are low alloy ferritic steel.

4.6 Specimen Withdrawal

The radiation levels in a BWR are expected to have no significant effect on the vessel wall, even for 40 yr of service. The specimens can be removed during any plant shutdown if required.

The specimen withdraw included three capsules of irradiated specimens as listed in paragraph 3.3. A flux capsule installed in the vessel belt line region was removed at the end of 1 yr of commercial power operation and a plot established of integrated neutron flux as determined by the flux wires versus megawatts thermal. Using a linear interpolation, the year that the vessel reaches the threshold of 10^{17} nvt is estimated and the removal of the first capsule established (expected at approximately one-fourth of design service life). The withdrawn specimens are tested and compared with original material properties to ensure that no

unexpected changes have occurred. The remaining withdraw schedule will be to remove the second capsule for specimen testing and comparison at three-fourths of design service life while retaining the third capsule for standby. Note: This is a comparison of GE NEDO-10115 and ASTM E 185-70 only. See UFSAR Section 4.2.6 for the current approved specimen withdrawal schedule.

The base material for the reactor pressure vessel forging, beltline and plate, were drop weight and Charpy V-notch tested. Typical data obtained are as follows (original data available at vendor's plant):

Identification	Test	Specimen Temperature	Requirement	Test Data
PB-2 top head Flange (ABU-134)	Drop weight charpy	20°F 10°F	No break 20 ft-lb avg.	No breaks -4 specimens 58 57 78 6 96 speci- 86 mens 82
PB-3 feedwater noxxles (AV-1909, 7K-6126A)	Drop weight charpy	50°F 10°F	No break 20 ft-lb avg.	No break -2 specimens 47 86 90 6 116 speci- 91 mens 84
PB-3 belt line material (C2773-2)	Drop weight charpy	20°F 10°F	No break 30 ft-lb vg.	No break -4 specimens 44 44 84 6 70 speci- 50 mens 46
PB-3 bottom head dollar plat (C3354-2)	Drop weight charpy	50° F 40°F	No break 30 ft-lb avg.	No break -2 specimens 55 66 70 6 74 speci- 65 mens 62

5.1 Significance

Dosimeters are a part of the specimens to measure flux. Irradiation induced temperature is of no consequence and not measured. Evaluation of the radiation spectrum is a development, not a surveillance function.

5.2 Neutron Flux Dosimeters

Iron, nickel with known cobalt content, and copper are used as flux monitors. One of each is included in each impact specimen capsule.

6.7 & 7.1 Method

The General Electric recommended test methods are not in complete conformance with ASTM E-184.

7.2.1 The surveillance program and test interpretation are based on 30 ft-lb Charpy impact. This data will indicate significant changes in NDT temperature, if any should occur.