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Annual Radioactive Waste Tank Inspection Program - 1991 (U)

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MASTER

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INTRODUCTION

Aqueous radioactive wastes from Savannah River Site (SRS) separations processes are contained in large underground carbon steel tanks. Inspections made during 1991 to evaluate these vessels and evaluations based on data accrued by inspections made since the tanks were constructed are the subject of this report.

SUMMARY

The 1991 inspection program revealed the condition of the Savannah River Site waste tanks was basically the same as reported in previous annual Tank Inspection Program reports. No additional leaksites were found. No indications of leakage from existing leaksites were observed. No additional evidence of corrosion of the waste tanks or ancillary equipment was observed.

In 1991 a total of 5433 photographs and 99 visual and video inspections were made.

INSPECTION PROGRAM

Background

Alkaline aqueous radioactive wastes produced at the Savannah River Site are stored in underground tanks. The waste comes primarily from nuclear fuel reprocessing operations in the separations areas (F and H) and contains most of the radioactive fission products from SRS operations. The waste in the tanks is present in three phases: sludge, supernate, and salt formed by supernate evaporation. The supernate consists primarily of $\text{NaNO}_3/\text{NaNO}_2$ and has a fission product content up to 20 Ci per gallon. The salt is primarily $\text{NaNO}_3/\text{NaNO}_2$ with a fission product content up to 60

Ci per gallon. The sludge consists primarily of MnO_2 and $\text{Fe}(\text{OH})_2$ with a fission product content up to 500 Ci per gallon.

Waste tank leak detection capabilities are essential to meet the primary objective of the SRS radioactive waste management program: to manage the waste in such a manner as to minimize the radiation exposure and associated risk to man and his environment over the lifetime of the radionuclides.

The detection of leaked waste is based on two principles: disappearance of material from its proper location and appearance of material in an improper location. At SRS, primary reliance is on the second principle because the quantity of the waste detectable in an improper location is much less than that detectable by inventory change in a large tank. Capacity of SRS tanks is 0.75 to 1.3 million gallons. Although rigorous tank inventory surveillance is practiced, primary leak detection methods rely on automatic surveillance of those areas into which the leaked waste is most likely to migrate.

The annulus of each double-wall tank is equipped with at least two single-point conductivity probes for leak detection. These probes are located at the bottom of the annulus and on opposite sides of the tank. The single-wall tanks are built on slabs with a network of leak collection channels which drain to a common sump. Continuous sump level monitoring and frequent sump liquid sampling provide the leak detection. Besides the automatic surveillance, routine direct visual surveys are made in the annular spaces and nonroutine direct visual surveys are made in primary tanks by direct observation through opened access risers and/or inspection holes in the roof.

In 1961-62, following leakage of waste into the annulus of tanks 9, 10, 14, and 16, the first remote imaging in-

spections were made in the annuli of some of the waste tanks using a periscope. Random inspections continued through 1970. Since that beginning, a program was initiated in November 1971 to periodically inspect all waste tanks using remote visual imagery techniques to monitor for corrosion, waste leakage, anomalies of any type, and to investigate process or equipment concerns.

Steel thickness of waste tanks has been measured periodically using ultrasonic techniques to monitor for general corrosion. An analog-type instrument was used in 1967 and 1969 to measure the thickness of the primary wall of selected double-wall tanks. In 1972 a more precise instrument was put in service. About 24,000 measurements made over a period of 14 years (1972 through 1985) indicated that no thinning of SRS tanks has occurred. The only tank at SRS that has experienced detectable corrosion is tank 23, a tank with a unique service history. The upper wall interior surfaces show general corrosion with mild pitting. The pitting is broad but shallow. This tank is used to receive contaminated water from 244H, the Receiving Basin for Off-Site Fuels, and 245H, the Resin Regeneration Facility.

Inspections are complicated by factors such as radiation and contamination, remote operation as far as 40 feet below grade, and insertion of equipment through small (generally 5 to 8 inch diameter) access openings. Inspection techniques that circumvent these difficulties have been developed; they yield good quality photographic records and thickness measurements. The techniques include periscopic systems, direct photographic systems, closed circuit television systems, and a system to measure waste tank wall and bottom plate thicknesses.

Waste tank inspection has been important in leak detection. The leaks in eight of the ten tanks have been detected by direct visual inspection or by one of the remote inspection techniques. Since the inspection program was initiated in 1971, five tanks were found to have leaksites that were not recognized before inspection. The annulus conductivity probes were not activated by these leaks because of the small amount of leakage. The leaked waste evaporated to dryness sealing the cracks before enough waste leaked to reach a conductivity probe.

The waste tank inspection program is divided into three phases: (1) visual and imagery inspection, (2) steel thickness measurement, and (3) metallurgical evaluation. This report gives the results of the 1991 visual imagery inspections. It summarizes all visual imagery inspections and ultrasonic steel thickness measurements that have been performed on these tanks. Metallurgical evaluation is not discussed in this report.

Tank Description

SRS has subsurface storage tanks of four different designs. The tanks are all constructed of carbon steel and reinforced concrete. They serve as containment vessels for storage and processing of radioactive wastes. Appendix A gives location, design type, project number, and construction period for each tank. A brief description of the different tank designs is given in the following paragraphs.

Type I Tanks

The 12 original storage tanks constructed between 1951 and 1953 are designated type I tanks. Tanks 1 through 8 are in F Area and Tanks 9 through 12 are in H Area. Each primary tank has a capacity of 750,000 gallons, is 75 feet in diameter, and is 24 1/2 feet high. Figure 1 shows the essential features of type I tanks, including the primary tank, the secondary pan, and the concrete support structure.

The primary container is a closed cylindrical tank with flat top and bottom constructed from 1/2-inch-thick steel plate. The top and bottom are joined to the cylindrical sidewall by curved knuckle plates. The primary tank is set in a circular pan of 1/2-inch-thick steel plate, 5 feet deep and 5 feet larger in diameter than the tank, thus forming an annular space 2 1/2 feet wide. The tank and pan are set on a 30-inch-thick base slab and are enclosed by a cylindrical 22-inch-thick reinforced concrete wall and a flat concrete roof that is also 22 inches thick. There are twelve 2-foot-diameter concrete columns within the primary tank to support the roof. Each column has a flared capital and is encased in 1/2-inch-thick steel plate.

A 9-foot layer of earth was placed over the tanks for radiation shielding. Cooling for each type I tank is provided by 36 parallel (water pipe) cooling coils.

A dehumidification duct in the annulus of each tank is routed from the tank top to the bottom of the annulus where it encircles the tank. The duct has distribution outlets and its cross-sectional area decreases as the distance from the air supply increases. Access to the tank interior is provided at eight locations, and to the annular space at four locations, through riser pipes. Each of the 12 riser pipes is capped at the top with a concrete plug. Each plug is provided with two 5-inch-diameter ports equipped with removable plugs. Some of these ports provide access for inspection.

All welds in the pan and primary tank were radiographically inspected, defects were corrected, and the welds

were rechecked radiographically. The welds in the flat bottoms of both the pan and the tank were vacuum-tested for leaks. Additionally, both vessels were hydrostatically tested. The water was maintained at full height in the tank for 24 hours before inspection for leaks was made. Cooling water piping was hydrostatically tested at 300 psig and then leak-tested with 100 psig air pressure in the piping.

Type II Tanks

Tanks 13 through 16, constructed in H Area in 1955 and 1956, are designated type II tanks. Figure 2 is a cross section of this type. Each primary tank has a capacity of 1,030,000 gallons, is 85 feet in diameter, and is 27 feet high.

The primary container for type II tanks consists of two concentric steel cylinders assembled with a flat bottom and a flat top into a form somewhat like a doughnut. The top and bottom are joined to the outer cylinder by rings of curved knuckle plates. The inner cylinder is flared at the top to accommodate the roof support column. This cylinder is joined to the flat steel top with a continuous butt weld and to a base fastened to the bottom with a continuous T-weld. Steel thicknesses are:

<u>Plate</u>	<u>Thickness, inch</u>
Top and bottom	1/2
Upper knuckle	9/16
Wall	5/8
Lower knuckle	7/8

The primary tank is set on a 1-inch sand bed within a circular pan of 1/2-inch-thick steel plate, 5 feet deep and 5 feet larger in diameter than the tank, thus forming an annular space 2 1/2 feet wide. The tank and pan assembly is surrounded by a cylindrical reinforced concrete enclosure with a 33-inch-thick wall and a flat concrete roof that is 45 inches thick. The tank and pan assembly and the surrounding wall are set on a foundation slab that is 42 inches thick. The roof is supported by the wall and by a central concrete column that fits within the inner cylinder of the vessel. The 45-inch-thick concrete roof provides radiation shielding; hence, no earth overburden is required. Cooling for each type II tank is provided by 44 parallel (water pipe) cooling coils. Access to the tank interior is provided at eight locations, and to the annular space at four locations, through riser pipes. Each of the 12 riser pipes is capped at the top with a concrete plug. Each plug is provided with two 5-inch-diameter ports equipped with removable plugs

which provide access for inspection. In addition to the four annulus risers, other access openings (10 to 14 additional openings per tank) have been drilled into the annulus of each of these tanks to permit inspection of practically all of the exterior wall of the primary vessels.

All welds in the primary tanks were radiographically inspected, defects were corrected, and the welds were rechecked radiographically. The pans were not inspected radiographically. The welds in the flat bottoms of the pans and the primary tanks were vacuum-tested for leaks, and the primary and secondary vessels were hydrostatically tested. Cooling water piping was hydrostatically tested at 300 psig and then leak-tested, with 100 psig air pressure in the piping.

Type IV Tanks

Tanks 17 through 24 are single-wall uncooled tanks. These tanks were designed for storage of waste that does not require auxiliary cooling. Tanks 17 through 20 were constructed in F Area in 1958 and tanks 21 through 24 were constructed in H Area between 1959 and 1961. Each tank has a capacity of 1,300,000 gallons, is 85 feet in diameter, and is 34 feet high (Figure 3).

Each type IV tank is basically a steel-lined, prestressed-concrete tank in the form of a vertical cylinder with a domed roof. Carbon steel plates, 3/8 inch thick, were used to form the cylindrical sides and flat bottom portion of the steel liners. The knuckle plates at the junction of the bottom and the sidewall are 7/16 inch thick. Concrete was built up around the steel vessel by the "shotcrete" technique.

Radiation shielding of the type IV tanks in F Area was accomplished by applying at least 32 inches of earth over each of the 7-inch-thick concrete domes. H Area tanks were shielded similarly, except that the earth cover was at least 44 inches thick to accommodate a somewhat higher radiation level from the waste.

Access to the interior of the tank is provided at six locations through riser pipes. Each riser pipe is capped at the top with a concrete plug. Some of these risers provide access for inspection.

All welds in the steel liners were x-rayed. All of the welded tank-bottom seams and the upper seams of the knuckle rings were vacuum leak-tested. Each tank was hydrostatically tested by filling with water to the normal fill line, prior to the back-filling operation, and then was allowed to remain filled until the time it was to be placed in use for waste storage.

Figure 1. Cooled Waste Storage Tank, Type I (Original 750,000 Gallons)

N92F013.01

Figure 2. Cooled Waste Storage Tank, Type II (1,030,000 Gallons)

Figure 3. Uncooled Waste Storage Tank, Type IV (Prestressed Concrete Walls, 1,300,000 Gallons)

M92F013.02

Figure 4. Cooled Waste Storage Tank, Type III (Stress Relieved Primary Liner, 1,300,000 Gallons)

Type III Tanks

The most recently constructed tanks are designated type III tanks (Figure 4). Twenty-seven tanks were built between 1967 and 1981. Tanks 25 through 28, 33 and 34, and 44 through 47 are located in F Area. Tanks 29 through 32, 35 through 43, and 48 through 51 are located in H Area.

The type III tank design was developed after an investigation into the causes of the leaks from the primary vessel of the type I and type II tanks. The conclusions of the study were that the leak-producing mechanism was nitrate stress-corrosion cracking at sites in or near the weld seams, and that stress relieving after fabrication should eliminate the cracking. For the type III tanks, means were provided for heating each finished tank to relieve the stresses generated during fabrication. In addition, some stress patterns were avoided, or minimized, by mounting the roof supporting column on the foundation pad rather than on the bottom of the primary tank (as in types I and II), and by providing an annular clearance around the roof supporting column. Each primary tank holds 1,300,000 gallons, is 85 feet in diameter, and is 33 feet high.

Type III tanks are similar to the doughnut-like form of type II tanks. Each primary vessel is made of two concentric cylinders joined to washer-shaped top and bottom plates by curved knuckle plates. Steel thicknesses are:

<u>Plate</u>	<u>Thickness, inch</u>
Top and bottom	1/2
Upper knuckle	1/2
Outer wall	
Upper band	1/2
Middle band	5/8
Lower band	3/4
Inner wall	
Upper band	1/2
Lower band	5/8
Lower knuckle	
Outer	7/8 (25 - 28 and 33 - 51) 1 (tanks 29 through 32)
Inner	5/8

The primary tank is set on a 6-inch bed of insulating concrete within the secondary containment vessel. The concrete bed is grooved radially so that ventilating air can flow from the inner annulus to the outer annulus. Liquid would move through the slots, facilitating

detection at the outer annulus, if any were to leak from the tank bottom or center annulus wall.

The secondary vessel is 5 feet larger in diameter than the tank, thus providing an outer annulus 2 1/2 feet wide. The secondary vessel is made of 3/8-inch thick steel throughout. Its sidewalls rise to the full height of the primary tank. The nested two-vessel assembly is surrounded by a cylindrical reinforced concrete enclosure with a 30-inch-thick wall. The enclosure has a 48-inch-thick flat reinforced concrete roof which is supported by the concrete wall and a central column that fits within the inner cylinder of the vessel. The 48-inch-thick concrete provides radiation shielding; hence, no earth overburden is required.

Cooling for the type III tank is provided by either deployable (water pipe) cooling coil bundles installed through risers in the tank top or 23 parallel (water pipe) cooling coils distributed throughout the tank.

A dehumidification duct in the annulus of each tank is routed from the tank top to the bottom of the annulus where it encircles the tank. The duct has distribution outlets and its cross-sectional area decreases as distance from the air supply increases. In these tanks, additional airflow is directed through the inner annulus, passes beneath the primary tank through radial grooves in the concrete base slab, and is exhausted into the outer annulus.

Tanks 29 through 34 were placed in service prior to 1976 with annulus riser pipes at four locations and interior riser pipes at various locations providing inspection access through 5-inch-diameter ports. All other type III tanks were placed in service after 1976. These tanks have annulus riser pipes at 18 locations that are 8 inches in diameter. These ports are equidistant around the tank and provide for inspection of all of the exterior wall of the primary vessel. In 1982, fourteen to sixteen additional 8-inch-diameter ports per tank were drilled in the tops of tanks 29 through 34 to provide adequate access ports for inspection of all of the exterior walls of their primary vessels. Interior riser pipes at various locations provide inspection access through ports with a diameter of from 5 to 8 inches. All ports are equipped with removable plugs.

On tanks 29 through 34 all butt welds on the primary tanks, except welds on the horizontal roof surface, and all butt welds on the secondary tanks joining bottom plates, knuckle plates, and the lowest courses of center-column and outer-wall plates, were radiographically inspected. Defects were corrected, then they were rechecked radiographically.

On all other type III tanks, all plate welds in the secondary tanks were radiographically inspected. The Quality Assurance Program included inspection of all radiographs by two independent groups of certified weld inspectors, and all radiographs were permanently stored for future reference. All spots on the inside or outside of the primary tanks, or the inside of the secondary tanks, where clips or lugs were removed, or where other excisions were made, were examined by magnetic particle or liquid penetrant techniques, and any defects were repaired.

All butt welds on the secondary tanks were vacuum leak-tested. All welds in the bottom assemblies of the primary tanks, including knuckle rings and lowest course welds, were vacuum leak-tested before each bottom assembly was lowered into final position, and then tested a second time after the stress-relieving operation. A full hydrostatic test, consisting of filling each primary tank to a depth of 32 ft and allowing it to stand 48 hours, was conducted after stress relieving. No leaks were found by the hydrostatic tests. All circumferential welds in the pipe loops of the deployable cooling coil bundles below the 1/2-inch-thick plate at the base of the riser plug were radiographed. The assembled cooler piping was tested hydrostatically to 500 psi and halide leak tested at 30 psi. Welds in the distributed cooling coils were radiographed and similarly leak tested.

The primary tank was stress-relieved in place after all burning, cutting, welding, and other high-temperature work (other than roof attachments) had been completed. Full stress relief, at 1100°F, was accomplished in accordance with the general requirements of the ASME Boiler and Pressure Vessel code.

Inspection Methods

Techniques have been developed for remote examination and evaluation of the waste tanks and ancillary equipment. For visual imaging, direct photography systems developed at SRS are used to perform photographic documentation with cameras inserted into the spaces to be inspected. Optical periscopes, boroscopes, and closed circuit television systems are also used where direct photography is not possible or where these systems provide a more comprehensive examination. Only the direct photography systems will be described since the other systems are used less frequently and are familiar systems that are widely used in the nuclear industry. Thickness measuring equipment will not be discussed since steel thickness measurements were not made of any waste tank during 1991.

Wide-angle direct photography is used for general inspections in the annuli of double-wall tanks and the primary vessels of both double-wall and single-wall tanks. This technique uses a 35mm Zeiss-Ikon Halogon Ultrawide camera that surveys a large area in a single photograph. The lens is 15mm f/8 fixed aperture and fixed focus with a field of focus from 18 1/2 inches to infinity. The lens is distortion free with a 100-degree field of view. The camera is not shielded. A bank of four electronic flash units are synchronized with the camera to provide illumination.

Direct photography is used for detailed inspections. The camera is shielded to reduce the degrading effect of ionizing radiation on the photographic film. The camera's residence time in a waste tank for this technique is longer than the wide-angle direct photographic technique, i.e., few minutes versus a few seconds; hence, shielding is required. The camera used is the 35mm Leitz's Leica CL. This is a range finder camera with interchangeable lenses. Normally a 21mm lens is used for tank inspection; alternate lenses are available with focal lengths of 28mm and 35mm. Illumination is provided by a single electronic flash unit.

PROGRAM IMPLEMENTATION

Visual Imagery

The 1991 inspection program used four visual imagery techniques: photography, wide-angle photography, closed circuit television, and periscopic inspection. The primary inspection methods were direct photography techniques, i.e., making a series of photographs providing detailed views of the tank and wide-angle photography for obtaining overview of large areas with a single photograph. Closed circuit television systems and periscopes were generally used to further investigate questionable conditions found during scheduled inspections and to troubleshoot process problems in tanks, ancillary cells, and pipes.

The continuing inspection program is aimed primarily at evaluating the condition of waste tanks and updating that evaluation with time. This objective was satisfied in 1991 by photographic inspections. The policy developed for photographic inspections in 1972 specified biennial inspection in the annuli of all waste tanks and annual inspection of those tanks in which waste had breached the primary vessel. Biennial inspections do not include all annulus risers, so the time required to inspect a tank through all annulus risers could be as long as four years. However, the wide-angle direct photogra-

phy method developed in 1974 was used to make annual inspections through all risers where inspections were not made by other photographic methods. Hence, inspections were made through all accessible annulus risers of the double-wall tanks and at least one inspection was made above the contents in the interior of each single-wall tank.

Inspections in tanks 1 through 12 are limited to approximately 25% of the exterior of the primary vessel walls and their annular spaces. This is considered adequate since the tanks are inactive, i.e., waste is not routinely transferred to or from them, their liquid levels are monitored continuously by installed instrumentation, and secondary confinement vessels are continuously monitored for leakage by leak detection devices. Additionally for those tanks that have known leaksites in the primary vessel, the supernate phase has been removed, minimized, or the level lowered below the level of known leaksites.

1991 Inspection Results

The 1991 inspection program was successfully completed. The annuli of all double-wall tanks and the interiors of single-wall tanks were inspected at accessible risers by at least one photographic technique. Other inspections were made as required by operating conditions and equipment performance. All inspections made in 1991 are listed in Appendix B.

These inspections revealed that the condition of the waste tanks remained virtually unchanged since inspected in 1990. No new leaksites were found in the waste tanks and no evidence was observed that the existing leaksites had leaked since previous inspection. No significant general corrosion of waste tanks was evidenced by the lack of change in their steel surfaces.

Rainwater continued to leak into the annuli of several tanks. After heavy rainfalls water was observed in the annuli of tanks 9 and 10. Efforts to determine the leakpaths for the leakage into tanks 9 and 10 have been unsuccessful. Water marks, surface stains, and calcite deposits indicated the leakage of rain or groundwater into the annuli of several other tanks, although these were dry when inspected. Inleakage into these other tanks was primarily due to poor riser plug gasket seals and failed seals where process pipes penetrate the tank annuli below grade.

Summary of Inspection Results

The following is a brief description of tank conditions as revealed by inspections and examinations made through 1991.

Tank 1

Tank 1 was put in service in 1954. A small amount of dried waste salt was observed on the annulus floor in 1969. Subsequent inspections have revealed no additional leakage. Hence, the amount of salt in the annulus has not changed. Inspection of the exterior wall of the primary vessel is limited to 25% using existing inspection techniques through the four risers that provide access to the annulus. Examination of the observable portion of the tank wall has not revealed the location of the leak(s). Inspection photographs of the steel surface of the tank and the annulus have shown no significant surface corrosion or other anomalies. Ultrasonic measurements made in 1978, 1979, 1981, 1983, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 2

Tank 2 was put in service in 1955. Examination of the observable portion (25%) of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic measurements made in 1967, 1972, 1973, 1977, 1981, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 3

Tank 3 was put in service in 1956. Examination of the observable portion (25%) of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic measurements made in 1973, 1977, 1981, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 4

Tank 4 was put in service in 1961. Examination of the observable portion (25%) of the exterior of the primary

vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic measurements made in 1973, 1977, 1981, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 5

Tank 5 was put in service in 1959. Examination of the observable portion (25%) of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic measurements made in 1973, 1977, 1981, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 6

Tank 6 was put in service in 1964. Examination of the observable portion (25%) of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic measurements made in 1974, 1977, 1978, 1979, 1981, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 7

Tank 7 was put in service in 1954. Examination of the observable portion (25%) of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic measurements made in 1974, 1979, 1981, 1983, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 8

Tank 8 was put in service in 1956. Examination of the observable portion (25%) of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic measurements made in 1973, 1977, 1981, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 9

Tank 9 was put in service in 1955. Leakage from the tank primary vessel into the annulus pan may have occurred

as early as 1955 when the "necklace" alarm, a conductivity leak detection device, shorted out permanently. Leakage was not certain until liquid waste was observed in the annulus pan in 1957. Currently the annulus pan contains 8 to 10 inches of leaked dry waste. Examination of the observable portion (25%) of the exterior of the primary vessel wall has shown three leaksites high on the tank wall; 269, 271, and 276 inches above the tank bottom. None of these leaksites is the source of the leaked waste in the annulus pan. The waste leaked at these sites was only enough to form localized small nodules. The leak(s) that is the source of the waste in the annulus pan has not been observed. Inspections have shown no significant surface corrosion, and the ultrasonic measurements made in 1979 and 1983 showed no detectable thinning of the tank wall had occurred.

Tank 10

Tank 10 was put in service in 1955. The first indication that Tank 10 had leaked was in 1959 when dried waste was discovered in the annulus pan during a visual inspection. Currently the annulus pan contains about 2 inches of leaked dry waste. Examination of the observable portion (25%) of the exterior of the primary vessel has not shown the source of the leaked waste or any other leaksite(s). Inspections have shown no significant surface corrosion, and the ultrasonic measurements made in 1979 and 1983 showed no detectable thinning of the tank wall had occurred.

Tank 11

Tank 11 was put in service in 1955. Twenty-five percent of the exterior of the primary vessel wall is observable via the four risers that provide access to the annulus. Inspections performed in 1974 revealed two leaksites, 189 and 235 inches above the tank bottom. Inspections have shown no significant surface corrosion, and ultrasonic measurements made in 1973, 1977, 1981, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 12

Tank 12 was put in service in 1956. Twenty-five percent of the exterior of the primary vessel is observable via the four risers that provide access to the annulus. Inspections in 1974 revealed two leaksites, 93 and 105 inches above the tank bottom. Inspections have shown no significant surface corrosion, and ultrasonic measurements made in 1972, 1973, 1977, 1981, 1983, and

1985 showed no detectable thinning of the tank wall had occurred.

Tank 13

Tank 13 was put in service in 1956. Ninety percent of the exterior wall of the primary vessel is observable via the 13 risers that provide access to the annulus. Inspections in 1977 revealed a leaksite 279 inches above the tank bottom. In 1980 another leaksite was discovered 269 inches above the tank bottom. Inspections have shown no significant surface corrosion, and ultrasonic measurements made in 1974, 1979, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 14

Tank 14 was put in service in 1957. The first indication that tank 14 had leaked was in 1959 when dry leaked waste was observed in the annulus pan. Currently the annulus pan contains 12–13 inches of leaked dry waste. Eighty-nine percent of the exterior of the primary vessel wall is observable via the 18 risers that provide access to the annulus. Inspections have located 33 leaksites, and it is estimated that there are about 50 leaksites in this tank. All of the observed leaksites are near the bottom circumferential weld that is 2.5 feet above the tank bottom, except one leaksite that was observed approximately 24 feet above the tank bottom. Inspections have shown no significant surface corrosion, and ultrasonic measurements made in 1979 and 1983 showed no detectable thinning of the tank wall had occurred.

Tank 15

Tank 15 was put in service in 1960. Inspections in 1972 below one of the four risers providing access to the annulus revealed two leaksites near the bottom circumferential weld about 2.5 feet above the tank bottom. Twelve additional risers were installed increasing the observable portion of the primary vessel wall from 25% to 96%. Inspections in 1973 via the additional risers revealed eleven other leaksites. No other leaksites have been found since 1973. Inspections have shown no significant surface corrosion, and ultrasonic measurements made in 1972, 1977, 1980, and 1984 showed no detectable thinning of the tank wall had occurred.

Tank 16

Tank 16 was put in service in 1959. Liquid waste was detected in the annulus pan in 1959. Seventy-three percent of the exterior wall of the primary vessel is observable via the sixteen risers that provide access to the annulus. Inspections in 1961 and 1962 through 13 risers revealed about 175 leaksites in the tank wall. In October 1961 and March 1962, two 5 3/4-inch-diameter samples were cut from the top horizontal circumferential weld of the tank wall about 40 feet apart. Metallurgical examination indicated the cause of the cracks was nitrate-induced stress corrosion. Extensive inspection performed since 1972 indicated the primary vessel wall has 300–350 leaksites. In 1978, 70% of the leaked waste in the annulus pan was removed leaving an insoluble heel containing approximately 30,000 Ci ¹³⁷Cs. Waste removal from the interior of the primary vessel was completed in 1980. Inspections have shown no significant surface corrosion. No ultrasonic steel thickness measurements of the tank were made because of the number of leaksites and the presence of leaked waste deposits on most of the primary vessel exterior.

Tank 17

Tank 17 was put in service in 1961. Examination of the steel liner has shown no evidence of failure, significant surface corrosion, or other anomalies.

Tank 18

Tank 18 was put in service in 1959. Examination of the steel liner has shown no evidence of failure, significant surface corrosion, or other anomalies. Ultrasonic measurements made in 1977, 1980, and 1983 showed no detectable thinning of the liner bottom had occurred.

Tank 19

Tank 19 was put in service in 1961. Examination of the steel liner has shown no evidence of failure, significant surface corrosion, or other anomalies. Ultrasonic measurements made in 1982 and 1985 showed no detectable thinning of the liner bottom had occurred.

Tank 20

Tank 20 was put in service in 1960. Examination of the steel liner has revealed 4 failure sites. In 1983, leaksites were observed in the wall of steel liner at heights of 22, 24.5, and 26.5 feet. In 1990 a leaksite was confirmed in the liner wall at a height of 26 feet, 4 inches. This site had been suspect since 1984.

This is a single-wall tank with no annulus. The leaksites in the steel liner were detected by inspections made from the tank interior because inspection of the exterior is not possible. It is possible that a small quantity of waste leaked from the steel liner. However, groundwater monitoring indicates waste has not escaped the concrete encasement.

Tank 21

Tank 21 was put in service in 1961. Examination of the steel liner has shown no evidence of failure, significant surface corrosion, or other anomalies. Ultrasonic measurements made in 1973, 1977, 1980, and 1983 showed no detectable thinning of the liner bottom had occurred.

Tank 22

Tank 22 was put in service in 1965. Examination of the steel liner has shown no evidence of failure, significant surface corrosion, or other anomalies. Ultrasonic measurements made in 1974, 1977, 1980, and 1983 showed no detectable thinning of the liner bottom had occurred.

Tank 23

Tank 23 was put in service in 1964. Examination of the steel liner has revealed corrosion but no evidence of failure. Ultrasonic measurements made in 1973, 1977, 1980, and 1983 showed no detectable thinning of the liner bottom had occurred. Examination of the steel liner has shown rust and tubercles on the surface of the upper portion. This tank serves as a receiver tank for inhibited contaminated water from 244H, the Receiving Basin for Off-Site Fuels, and 245H, the Resin Regeneration Facility. The tank was filled to no more than 50% capacity to maintain the remaining space for emergency use. This mode of operation exposed only the lower half of the tank to the inhibited contents and exposed the upper half of the tank to a warm humid atmosphere. In 1984 the rust and

tubercles were cleaned from two small areas exposing the steel surface. The cleaned liner surface was generally corroded with mild pitting; the pits were broad and shallow.

Tank 24

Tank 24 was put in service in 1963. Examination of the steel liner has shown no evidence of failure, significant surface corrosion, or other anomalies. Ultrasonic measurements made in 1984 showed no detectable thinning of the liner bottom had occurred.

Tank 25

Tank 25 was put in service in 1980. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1979 and 1983 showed no detectable thinning of the tank wall had occurred.

Tank 26

Tank 26 was put in service in 1980. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1979 and 1983 showed no detectable thinning of the tank wall had occurred.

Tank 27

Tank 27 was put in service in 1980. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1979 and 1983 showed no detectable thinning of the tank wall had occurred.

Tank 28

Tank 28 was put in service in 1980. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1979 and 1983 showed no detectable thinning of the tank wall had occurred.

Tank 29

Tank 29 was put in service in 1971. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1973 and 1974 showed no detectable thinning of the tank wall had occurred.

Tank 30

Tank 30 was put in service in 1974. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1975 showed no detectable thinning of the tank wall had occurred.

Tank 31

Tank 31 was put in service in 1972. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies.

Tank 32

Tank 32 was put in service in 1971. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies.

Tank 33

Tank 33 was put in service in 1969. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies.

Tank 34

Tank 34 was put in service in 1972. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies.

Tank 35

Tank 35 was put in service in 1977. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1977, 1981, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 36

Tank 36 was put in service in 1977. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1977, 1981, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 37

Tank 37 was put in service in 1978. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1977, 1981, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 38

Tank 38 was put in service in 1981. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1980, 1981, and 1984 showed no detectable thinning of the tank wall had occurred.

Tank 39

Tank 39 was put in service in 1982. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1980, 1981, 1984, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 40

Tank 40 was put in service in 1986. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1980, 1981, and 1984, before putting the tank in service, showed no change in the wall thickness had occurred.

Tank 41

Tank 41 was put in service in 1982. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1980, 1981, and 1984 showed no detectable thinning of the tank wall had occurred.

Tank 42

Tank 42 was put in service in 1982. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1980, 1981, 1984, 1985, and 1990 showed no detectable thinning of the tank wall had occurred.

Tank 43

Tank 43 was put in service in 1982. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1980, 1981, 1984, and 1985 showed no detectable thinning of the tank wall had occurred.

Tank 44

Tank 44 was put in service in 1982. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1980, 1981, and 1984 showed no detectable thinning of the tank wall had occurred.

Tank 45

Tank 45 was put in service in 1982. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1980, 1981, and 1984 showed no detectable thinning of the tank wall had occurred.

Tank 46

Tank 46 was put in service as an emergency spare tank in 1980. The tank has remained empty. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1980, 1981, and 1984 showed no detectable thinning of the tank wall had occurred.

Tank 47

Tank 47 was put in service in 1980. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1980, 1981, and 1984 showed no detectable thinning of the tank wall had occurred.

Tank 48

Tank 48 was put in service in 1983. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1982, prior to putting the tank in service, provide reference measurements for the future.

Tank 49

Tank 49 was put in service in 1983. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1982, prior to putting the tank in service, provide reference measurements for the future.

Tank 50

Tank 50 was put in service in 1983. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1982, prior to putting the tank in service, provide reference measurements for the future.

Tank 51

Tank 51 was put in service in 1986. Examination of 100% of the exterior of the primary vessel wall and the annulus has shown no leakage, significant surface corrosion, or other anomalies. Ultrasonic thickness measurements made in 1982, prior to putting the tank in service, provide reference measurements for the future.

APPENDIX A
WASTE TANKS AT SRS

<u>Number</u>	<u>Location</u>	<u>Type</u>	<u>Project Number</u>	<u>Construction Period</u>	<u>Type of Construction*</u>
1-8	F	I	8980	1951-1953	Double wall-cooled
9-12	H	I	8980	1951-1953	Double wall-cooled
13-16	H	II	8980 P.W.O.	1955-1956	Double wall-cooled
17-20	F	IV	981031	1958	Single wall-uncooled
21-24	H	IV	981089	1962	Single wall-uncooled
25-28	F	III	951493 (75-1-a)	1975-1978	Double wall-cooled
29-32	H	III	981232	1967-1970	Double wall-cooled
33-34	F	III	950974	1969-1972	Double wall-cooled
35-37	H	III	951463 (74-1-a)	1974-1977	Double wall-cooled
38-43	H	III	951618 (76-8-a)	1976-1980	Double wall-cooled
44-47	F	III	951747	1977-1980	Double wall-cooled
48-51	H	III	951828 (78-18-b)	1978-1981	Double wall-cooled

*Tanks 32 and 35 have removable, roof-supported cooling coils. Tanks 30, 33, and 34 have bottom-supported deployable cooling coils. Tanks 29 and 31 have some deployable and some close-packed cooling assemblies, all bottom supported. All other cooled tanks have permanently installed cooling coils, roof-supported in type I and II and bottom-supported in type III tanks.

**APPENDIX B
INSPECTIONS MADE IN 1991**

<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<div style="border: 1px solid black; width: 100px; height: 15px; margin: 0 auto;"></div> <u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
F	01	East	A	05/30/91		6647:01-04		No change
		North	A	05/30/91	6648:01			No change
		North	A	11/19/91		6739:01-06		Inspection was made to check the annulus for leaked waste since measurements indicated a decrease in waste in the tank. There was no indication of recent leakage into the annulus.
		South	A	05/30/91	6648:02			No change
		South	A	11/19/91		6738:01-05		Inspection was made to check the annulus for leaked waste since measurements indicated a decrease in waste in the tank. No waste was observed.
		West	A	05/30/91		6649:01-17		No change
		02	I	11/19/91	6740:01			Inspection revealed that tape measurements were taken on a salt formation. Flushing had reduced the salt height. Subsequent measurements then indicated a lower waste level.
		05	I	11/19/91	6740:02			Inspection revealed that tape measurements were taken on a salt formation. Flushing had reduced the salt height. Subsequent measurements then indicated a lower waste level.
		Center	I	11/19/91	6737:01-04			Inspection was made to investigate a decrease in the waste level indicated by the reel tape and steel tape measurements. Salt formations were present beneath risers 2 and 5. Additional inspections were made at risers 2 and 5.

The numbers listed under WAP, DP, and PSP identify photographs in the WMT files.

WAP = wide angle photography; DP = direct photography; PSP = periscopic photography;

DB = diversion box; ERIP = encasement riser inspection port; EVAP = waste evaporator; WHIP = waste header inspection port

APPENDIX B
INSPECTIONS MADE IN 1991

<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
F	02	East	A	06/11/91	6659:03			Normal
		North	A	06/11/91	6659:02			Normal
		South	A	06/11/91		6661:01-17		Normal
		West	A	06/11/91	6659:01			Normal
		02	I	12/05/91	6742:01			Inspection verified the presence of salt formations above the liquid beneath the steel tape riser.
		02	I	12/10/91	6745:01-02			Inspection verified the presence of salt formations above the liquid beneath the steel tape riser.
		05	I	12/05/91	6742:02			Inspection verified the presence of salt formations above the reel tape riser.
		07	I	12/10/91	6745:01-02			Inspection was made to determine if riser 7 was suitable for relocation of the reel tape. Salt formations above the liquid level below the riser make this location unsuitable.
		Center	I	12/05/91	6742:03-04			Inspection was made to determine if salt formations were present above the liquid beneath reel tape and steel tape risers. Salt formations were present beneath both risers.
F	03	East	A	06/12/91	6663:01			Normal
		North	A	06/11/91		6662:01-17		Normal
		South	A	06/12/91	6663:02			Normal
		West	A	06/12/91	6663:03			Normal
F	04	East	A	06/11/91	6660:04			Normal
		North	A	06/11/91	6660:03			Normal
		South	A	06/11/91	6660:01			Normal
		West	A	06/11/91	6660:02			Normal
F	05	East	A	06/13/91	6667:01			Normal

**APPENDIX B
INSPECTIONS MADE IN 1991**

<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
F	05	North	A	06/13/91	6667:02			Normal
		South	A	06/13/91		6666:01-17		Normal
		West	A	06/13/91	6667:03			Normal
		02	I	08/21/91	6716:01-02			Inspection was made to determine if liquid addition to the tank had occurred. The new reel-tape showed an increase in the tank. No liquid was observed in the tank.
		02	I	09/03/91			VISUAL	An attempt was made to view the inlet line to determine if a downcomer was on this line. However, cooling coils blocked view of the line.
		Center	I	08/21/91		6716:03-04		Inspection was made to determine if liquid addition to the tank had occurred. The new reel-tape showed an increase in the tank. No liquid was observed in the tank.
F	06	East	A	06/12/91	6664:01			Normal
		North	A	06/12/91		6665:01-17		Normal
		South	A	06/12/91	6664:02			Normal
		West	A	06/12/91	6664:03			Normal
F	07	North	A	06/12/91	6668:01			Normal
		North	A	07/17/91	6694:01			Inspection was made of the annulus after measurements indicated an unexplained decrease in the liquid level of the tank. No waste was observed in the annulus and the annulus appeared normal.
		South	A	06/12/91	6668:02			Normal
		South	A	07/17/91	6694:02			Inspection was made of the annulus after measurements indicated an unexplained decrease in the liquid level of the tank. No waste was observed in the annulus and the annulus appeared normal.

APPENDIX B
INSPECTIONS MADE IN 1991

Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
F	07	West	A	06/12/91	6668:03			Normal
		West	A	07/17/91	6694:03			Inspection was made of the annulus after measurements indicated an unexplained decrease in the liquid level of the tank. No waste was observed in the annulus and the annulus appeared normal.
		Center	I	07/19/91	6695:01-04			Inspection was made of the annulus after an unexplained decrease in the liquid level of the tank. No waste was observed in the annulus and the annulus appeared normal.
F	08	East	A	06/13/91	6669:01			Normal
		North	A	06/13/91	6669:02			Normal
		South	A	06/14/91		6670:01-17		Normal
		West	A	06/13/91	6669:03			Normal
H	09	South	A	01/07/91		5741:01-05		No change
		South	A	01/14/91		5758:01-06		No change
		South	A	01/22/91		5793:01-04		No change
		South	A	01/29/91		5796:01-07		No change
		South	A	02/05/91		5819:01-04		No change
		South	A	02/12/91		5827:01-04		No change
		South	A	02/19/91		5854:01-04		No change
		South	A	02/25/91		5884:01-04		No change
		South	A	03/04/91		5905:01-07		No change
		South	A	03/05/91		5906:01-17		The tank and annulus condition appeared unchanged since inspected on 3-27-90 except for the changes in the surface of the dry leaked waste on the annulus floor. Those changes were documented by other inspections.
		South	A	03/11/91		5919:01-04		No change
		South	A	03/20/91		5942:01-06		No change

APPENDIX B
INSPECTIONS MADE IN 1991

<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	09	South	A	03/25/91		5959:01-04		No change
		South	A	04/01/91		5963:01-04		Changes had occurred in the surface of the dry leaked waste on the annulus floor. No water was observed in the annulus although heavy rainfall had occurred prior to the inspection.
		South	A	04/08/91		5971:01-05		No change
		South	A	04/15/91		5981:01-04		No change
		South	A	04/22/91		5988:01-06		No change
		South	A	04/30/91		6603:01-04		Water was observed in the annulus after heavy rainfall. 4.77 inches fell during the preceding week.
		South	A	05/14/91		6635:01-04		Water was still present in the annulus.
		South	A	05/23/91		6640:01		Water was still present in the annulus.
		South	A	05/28/91		6644:01-04		Water was still present in the annulus.
		South	A	06/03/91		6651:01-05		Water was still present in the annulus.
		South	A	06/10/91		6656:01-04		Water was still present in the annulus.
		South	A	06/19/91		6673:01-04		No water was observed in the annulus.
		South	A	06/24/91		6677:01-04		No change
		South	A	07/01/91		6681:01-04		No change
		South	A	07/08/91		6685:01-04		Water was observed in the annulus after heavy rainfall. 3.62 inches fell during the preceding week.
		South	A	07/15/91		6690:01-04		Water was still present in the annulus.
		South	A	07/24/91		6698:01-04		Additional water was observed in the annulus after heavy rainfall. 5.39 inches fell during the preceding week.

**APPENDIX B
INSPECTIONS MADE IN 1991**

<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	09	South	A	07/29/91		6704:01-04		Water was still present in the annulus.
		South	A	08/05/91		6709:01-04		Additional water was observed in the annulus after heavy rainfall. 8.5 inches fell during the preceding week.
		South	A	08/13/91		6713:01-04		Water was still present in the annulus.
		South	A	08/16/91				A CCTV inspection (File Tape 193) was made to document conditions in the annulus. No water was observed.
		South	A	08/21/91				A CCTV inspection (File Tape 193) was made to document conditions in the annulus. No water was observed.
		South	A	08/28/91				A CCTV inspection (File Tape 193) was made to document conditions in the annulus. No water was observed.
		South	A	09/06/91				A CCTV inspection (File Tape 193) was made to document conditions in the annulus. No water was observed.
		South	A	09/12/91				A CCTV inspection (File Tape 193) was made to document conditions in the annulus. No water was observed.
		South	A	09/17/91				A CCTV inspection (File Tape 193) was made to document conditions in the annulus. No water was observed.
		South	A	09/23/91				A CCTV inspection (File Tape 193) was made to document conditions in the annulus. No water was observed.

**APPENDIX B
INSPECTIONS MADE IN 1991**

<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	09	South	A	10/03/91				A CCTV inspection (File Tape 193) was made to document conditions in the annulus. No water was observed.
		South	A	10/08/91				A CCTV inspection (File Tape 193) was made to document conditions in the annulus. No water was observed.
		South	A	10/16/91				A CCTV inspection (File Tape 193) was made to document conditions in the annulus. No water was observed.
		South	A	10/21/91				A CCTV inspection (File Tape 193) was made to document conditions in the annulus. No water was observed.
		South	A	11/08/91		6732:01-04		No water was observed. However, the conductivity probe was positioned on the wrong side of the duct to provide the earliest possible leak detection. The probe was between the duct and the secondary containment wall.
		South	A	11/14/91		6734:01-04		No water was observed. The conductivity probe was still located on the wrong side of the ventilation duct.
		South	A	12/05/91		6743:01-03		No change
		South	A	12/09/91		6746:01-04		No change
		South	A	12/15/91		6749:01-04		No change
		South	A	12/23/91		6753:01-04		No change
		South	A	12/30/91		6764:01-04		No change
		West	A	01/07/91		5740:01-04		No change
		West	A	01/14/91		5757:01-05		No change
		West	A	01/21/91		5792:01-04		No change

APPENDIX B
INSPECTIONS MADE IN 1991

Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	09	West	A	02/05/91		5818:01-04		No change
		West	A	02/12/91		5828:01-04		No change
		West	A	02/19/91		5853:01-04		No change
		West	A	02/25/91		5883:01-04		No change
		West	A	03/04/91		5904:01-05		No change
		West	A	03/05/91	5908:01			The tank and annulus con- dition appeared unchanged since inspected on 4-2-90 except for the changes in the surface of the dry leaked waste on the annulus floor. Those changes were documented by other inspections.
		West	A	03/11/91		5918:01-08		No change
		West	A	03/20/91		5941:01-04		No change
		West	A	03/25/91		5958:01-04		No change
		West	A	04/01/91		5962:01-04		Changes had occurred in the surface of the dry leaked waste on the annulus floor. No water was observed in the annulus although heavy rainfall had occurred prior to the inspection.
		West	A	04/08/91		5970:01-04		No change
		West	A	04/15/91		5980:01-04		No change
		West	A	04/22/91		5987:01		No change
		West	A	04/30/91		6602:01-04		Water was observed in the annulus after heavy rainfall. 4.77 inches fell during the preceding week.
		West	A	05/06/91		6620:01-04		Water was still present in the annulus.
		West	A	05/14/91		6634:01-04		Water was still present in the annulus.
		West	A	05/23/91		6639:01-05		Water was still present in the annulus.
		West	A	05/28/91		6643:01-04		Water was still present in the annulus.
		West	A	06/03/91		6650:01-04		Water was still present in the annulus.

**APPENDIX B
INSPECTIONS MADE IN 1991**

<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	09	West	A	06/10/91		6655:01-04		No water was observed in the annulus.
		West	A	06/17/91		6671:01-04		No water was observed in the annulus.
		West	A	06/24/91		6676:01-04		No water was observed in the annulus.
		West	A	07/01/91		6680:01-04		Water was observed in the annulus after heavy rainfall. 3.62 inches fell during the preceding week.
		West	A	07/08/91		6684:01-06		Water was observed in the annulus after heavy rainfall. 3.62 inches fell during the preceding week.
		West	A	07/15/91		6689:01-04		No water was observed in the annulus.
		West	A	07/24/91		6697:01-04		Water was observed in the annulus after heavy rainfall. 5.39 inches fell during the preceding week.
		West	A	07/29/91		6703:01-04		Water was still present in the annulus.
		West	A	08/05/91		6708:01-04		Additional water was observed in the annulus after heavy rainfall. 8.5 inches fell during preceding week.
		West	A	08/13/91		6712:01-04		Water was still present in the annulus.
		East	A	03/05/91		5907:01-17		The tank and annulus condition appeared unchanged since inspected on 4-11-90 except for the changes in the surface of the dry leaked waste on the annulus floor. Those changes were documented by other inspections.
		East	A	03/11/91		5922:01-04		Inspection was made to search for paths where rainwater leaked into the annulus. Evidence of water inleakage was observed around the purge air inlet duct.

**APPENDIX B
INSPECTIONS MADE IN 1991**

<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	10	North	A	01/07/91		5743:01-04		No change
		North	A	01/14/91		5760:01-04		No change
		North	A	01/21/91		5795:01-04		No change
		North	A	01/29/91		5798:01-04		No change
		North	A	02/05/91		5821:01-04		No change
		North	A	02/12/91		5829:01-04		No change
		North	A	02/19/91		5856:01-04		No change
		North	A	02/25/91		5886:01-04		No change
		North	A	03/04/91		5903:01-05		No change
		North	A	03/05/91	5909:02			The tank and annulus condition appeared unchanged since inspected on 3-24-90 except for the changes in the surface of the dry leaked waste on the annulus floor. Those changes were documented by other inspections.
		North	A	03/11/91		5921:01-04		No change
		North	A	03/20/91		5944:01-04		No change
		North	A	03/25/91		5961:01-04		No change
		North	A	04/01/91		5965:01-04		No change
		North	A	04/08/91		5973:01-04		No change
		North	A	04/15/91		5983:01-03		No change
		North	A	04/22/91		5990:01-04		No change
		North	A	04/30/91		6605:01-04		Damp area was observed in the annulus after heavy rainfall. 4.77 inches fell during the preceding week.
		North	A	05/06/91		6623:01-04		Waste on the annulus floor appeared to be dry.
		North	A	05/14/91		6637:01-04		No change
		North	A	05/23/91		6642:01-04		No change
		North	A	05/28/91		6646:01-04		No change
		North	A	06/03/91		6653:01-04		No change
		North	A	06/10/91		6658:01-04		No change
		North	A	06/19/91		6675:01-04		No change
		North	A	06/24/91		6679:01-04		No change
		North	A	07/01/91		6683:01-04		No change

**APPENDIX B
INSPECTIONS MADE IN 1991**

<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	10	North	A	07/08/91		6687:01-04		No change
		North	A	07/15/91		6692:01-05		No change
		North	A	07/24/91		6700:01-04		No change
		North	A	07/29/91		6706:01-04		No change
		North	A	08/05/91		6711:01-04		No water was observed.
		North	A	08/13/91		6715:01-05		No water was observed.
		North	A	08/28/91				A CCTV inspection (File Tape 194) was made to document condition in the annulus. No water was observed.
		North	A	09/06/91				A CCTV inspection (File Tape 194) was made to document conditions in the annulus. No water was observed.
		North	A	09/12/91				A CCTV inspection (File Tape 194) was made to document conditions in the annulus. No water was observed.
		North	A	09/17/91				A CCTV inspection (File Tape 194) was made to document conditions in the annulus. No water was observed.
		North	A	09/19/91				A CCTV inspection (File Tape 194) was made to document conditions in the annulus. No water was observed.
		North	A	10/03/91				A CCTV inspection (File Tape 194) was made to document conditions in the annulus. No water was observed.
		North	A	10/08/91				A CCTV inspection (File Tape 194) was made to document conditions in the annulus. No water was observed.
		North	A	10/16/91				A CCTV inspection (File Tape 194) was made to document conditions in the annulus. No water was observed.

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INSPECTIONS MADE IN 1991

Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	10	North	A	10/21/91				A CCTV inspection (File Tape 194) was made to document conditions in the annulus. No water was observed.
		North	A	11/14/91		6736:01-04		No change
		North	A	12/09/91		6748:01-04		No change
		North	A	12/15/91		6751:01-04		No change
		North	A	12/23/91		6755:01-04		No change
		North	A	12/30/91		6766:01-04		No change
		West	A	01/07/91		5742:01-04		No change
		West	A	01/14/91		5759:01-04		No change
		West	A	01/21/91		5794:01-04		No change
		West	A	01/28/91		5797:01-04		No change
		West	A	02/05/91		5820:01-04		No change
		West	A	02/12/91		5830:01-04		No change
		West	A	02/19/91		5855:01-04		No change
		West	A	02/25/91		5885:01-04		No change
		West	A	03/04/91		5902:01-05		Water was observed in the annulus after heavy rainfall. 4.25 inches fell during the preceding week.
		West	A	03/05/91	5909:01			The tank and annulus condition appeared unchanged since inspected on 3-24-90 except for the changes in the surface of the dry lake bed waste that have been documented by other inspections and the presence of water from heavy rainfall.
		West	A	03/11/91		5920:01-04		The annulus appeared to be dry.
		West	A	03/20/91		5943:01-05		No change
		West	A	03/25/91		5960:01-04		No change
		West	A	04/01/91		5964:01-04		No change
		West	A	04/08/91		5972:01-04		No change
		West	A	04/15/91		5982:01-04		No change
		West	A	04/22/91		5989:01-04		No change
		West	A	04/30/91		6604:01-04		Water was observed in the annulus after heavy rainfall. 4.77 inches fell during the preceding week.

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<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	10	West	A	05/06/91		6620:01-04		Water was still present in the annulus.
		West	A	05/14/91		6636:01-04		Water was still present in the annulus.
		West	A	05/23/91		6641:01-04		All water had evaporated from the annulus.
		West	A	05/28/91		6645:01-04		No change
		West	A	06/03/91		6652:01-04		No change
		West	A	06/10/91		6657:01-04		No change
		West	A	06/19/91		6674:01-04		No change
		West	A	06/24/91		6678:01-04		No change
		West	A	07/01/91		6682:01-04		No change
		West	A	07/08/91		6686:01-04		Water was observed in the annulus after heavy rainfall. 3.62 inches fell during the preceding week.
		West	A	07/15/91		6691:01-04		Water was still present in the annulus.
		West	A	07/24/91		6699:01-04		Additional water was observed in the annulus after heavy rainfall. 5.39 inches fell during the preceding week.
		West	A	07/29/91		6705:01-04		Water was still present in the annulus.
		West	A	08/05/91		6710:01-03		Additional water was observed in the annulus after heavy rainfall. 8.5 inches fell during the preceding week.
		West	A	08/13/91		6714:01-04		Water was still present in the annulus.
		West	A	10/08/91		6727:01-04		No water was observed.
		West	A	11/08/91		6731:01-04		No change.
		West	A	11/14/91		6735:01-04		No change
		West	A	12/05/91		6744:01-04		No change
		West	A	12/09/91		6747:01-04		No change
		West	A	12/15/91		6750:01-04		No change
		West	A	12/23/91		6754:01-04		No change
		West	A	12/30/91		6765:01-04		No change
	01		I	03/07/91	5910:01-03			Inspection revealed there was a transferable quantity of liquid in the tank. The jet suction leg was covered with liquid.

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INSPECTIONS MADE IN 1991**

Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	11	East	A	03/06/91	5911:02			No change
		North	A	03/06/91	5911:01			No change
		North	A	09/08/91		6718:01-08		Water was observed in the annulus. The depth of the water was estimated to be approximately 3 inches.
		South	A	03/06/91		5913:01-17		Water leakage had changed the stains and marks on the tank wall.
		South	A	05/06/91		6619:01-06		Inspection was made to determine if rainwater had leaked into the annulus. No water was observed in the annulus.
		West	A	03/06/91		5914:01-17		Water leakage had changed the stains and marks on the tank wall.
H	12	East	A	03/06/91		5915:01-17		No change
		North	A	03/06/91	5912:02			A more detailed inspection will be made to investigate an apparent change in the leaked waste deposit at crack sites in the tank wall.
		North	A	04/10/91		5976:01-04		Waste formation on the tank wall appears to partially washed away by the leakage of water. Water apparently leaked into the annulus ran down the outside of the tank wall dissolving away some of the leaked waste that had been on the wall.
		South	A	03/06/91		5916:01-17		No change
		West	A	03/06/91	5912:01			No change
		010	A	03/14/91	5932:03			No change
		032	A	03/14/91	5932:04			No change
H	13	055	A	03/14/91	5932:05			No change
		071	A	03/14/91	5932:06			No change
		107	A	03/15/91		5935:01-17		No change

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<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	13	151	A	03/14/91	5932:07			No change
		175	A	03/15/91		5936:01-17		No change
		207	A	03/15/91		5937:01-17		Water leaking into the annulus between the annulus cover plates, the concrete wall and the tank top caused additional calcite deposits on the top of the tank and the pan ledge.
		228	A	03/14/91	5932:08			No change
		East	A	03/15/91		5933:01-17		Water leaking into the annulus between the annulus cover plates and the concrete wall caused additional stains on the floor and calcite deposits on pan ledge.
		North	A	03/14/91	5932:01			No change
		South	A	03/14/91	5932:02			No change
		West	A	03/15/91		5934:01-17		No change
		04-A	I	05/15/91			VISUAL	Inspection was made to determine why the conductivity probe could not be lifted. No cause for restriction was observed. The probe appeared to be unobstructed and was free of deposits.
		04-A	I	06/05/91	6654:01-04			Inspection was made to determine why the conductivity probe could not be lifted. No cause for restriction was observed. The probe appeared to be unobstructed and was free of deposits.
H	14	013	A	03/12/91		5925:01-17		No change
		032	A	03/14/91	5931:01			No change
		065	A	03/14/91	5931:02			Stains and marks on tank wall and pan ledge caused by the inleakage of water.

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<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	14	108	A	03/14/91	5931:03			No change
		118	A	03/14/91	5931:04			No change
		125	A	03/14/91	5931:05			No change
		151	A	03/12/91		5926:01-17		No change
		170	A	03/12/91		5927:01-17		Water inleakage had changed the stains and marks on the tank wall.
		207	A	03/12/91		5928:01-17		No change
		235	A	03/12/91		5929:01-17		No change
		259	A	03/12/91		5930:01-17		No change
		East	A	03/12/91		5923:01-17		No change
		North	A	03/12/91		5924:01-17		No change
	15	010	A	03/21/91		5949:01-17		No change
		032	A	04/02/91	5967:04			No change was observed in the annulus other than additional stains on the tank wall caused by the inleakage of water.
		055	A	04/02/91	5967:05			No change
		071	A	04/02/91	5967:06			No change
		107	A	03/21/91		5950:01-17		No change was observed in the leaked waste. Additional stains were observed on the tank wall that were caused by the inleakage of rainwater.
		117	A	03/21/91		5951:01-17		No change was observed in the leaked waste deposits on the tank wall. However, rainwater had leaked into the annulus and redistributed some of the waste on the annulus floor.
		137	A	02/19/91		5867:01-10		No change
		137	A	03/21/91		5945:01-10		No change was observed in the leaked waste deposits on the tank wall. However, rainwater had leaked into the annulus and redistributed some of the waste on the annulus floor.

**APPENDIX B
INSPECTIONS MADE IN 1991**

Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	15	137	A	03/21/91		5952:01-17		No change was observed in the leaked waste deposits on the tank wall. However, rainwater had leaked into the annulus and redistributed some of the waste on the annulus floor.
		171	A	03/21/91		5946:01-17		No change was observed in the leaked waste deposits on the tank wall. However, rainwater had leaked into the annulus and redistributed some of the waste on the annulus floor.
		182	A	03/21/91		5947:01-17		No change was observed in the leaked waste deposits on the tank wall. However, rainwater had leaked into the annulus and redistributed some of the waste on the annulus floor.
		207	A	04/02/91	5967:07			No change
		223	A	04/02/91	5967:08			No change
		East	A	04/02/91	5967:01			No change
		North	A	04/02/91	5967:02			No change
		South	A	04/02/91		5966:01-17		No change
		West	A	04/02/91	5967:03			No change
	16	118	A	04/02/91		5968:01-17		No change
		207	A	03/22/91		5956:01-17		No change
		262	A	03/22/91		5957:01-17		No change
		35	A	03/22/91		5955:01-17		No change
		East	A	03/22/91		5953:01-17		No change
		West	A	03/22/91		5954:01-17		No change
		3'6"	I	07/11/91	6693:01-06			Inspection was made to verify position of conductivity probe.
F	17	East	I	07/25/91		6702:01-48		Tank condition was normal. However, rainwater had leaked into the tank. The tank wall was damp adjacent to the SE and SW risers.

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
F	18	Center	I	11/06/91		6730:01-12		Normal
F	19	NE	I	07/09/91		6688:01-36		Normal
F	20	SW	I	09/17/91		6721:01-52		No change
H	21	NE	I	11/25/91		6741:01-25		Normal
H	22	NE	I	11/01/91		6729:01-45		Normal
		NW	I	05/08/91			VISUAL	Inspection was made to determine where seal water was leaking from the slurry pump. Water was observed leaking; however, the location was not determined by periscopic inspection.
H	23	SW	I	11/13/91		6733:01-37		Normal
H	24	SW	I	10/17/91		6728:01-48		Normal
F	25	A-01	A	04/26/91	5992:01			Normal
		A-02	A	04/26/91	5992:02			Normal
		A-03	A	04/26/91	5992:03			Normal
		A-04	A	04/26/91	5992:04			Normal
		P-01	A	04/26/91	5992:05			Normal
		P-02	A	04/26/91	5992:06			Normal
		P-03	A	04/26/91		5994:01-25		Normal
		P-04	A	04/26/91		5995:01-25		Normal
		P-05	A	04/26/91	5992:07			Normal
		P-06	A	04/26/91	5992:08			Normal
		P-07	A	04/26/91	5992:09			Normal
		P-08	A	04/26/91	5992:10			Normal
		P-09	A	04/26/91	5992:11			Normal
		P-10	A	04/26/91	5992:12			Normal
F	26	P-11	A	04/26/91		5996:01-25		Normal
		P-12	A	04/26/91		5997:01-25		Normal
		P-13	A	04/26/91	5992:13			Normal
		P-14	A	04/26/91	5992:14			Normal
		A-01	A	05/01/91		6609:01-25		Normal
		A-02	A	05/01/91		6610:01-25		Normal
		A-03	A	05/01/91		6611:01-25		Normal
		A-04	A	05/01/91		6612:01-25		Normal
		P-01	A	05/01/91	6606:01			Normal
		P-02	A	05/01/91	6606:02			Normal
		P-03	A	05/01/91	6606:03			Normal
		P-04	A	05/01/91	6606:04			Normal
		P-05	A	05/01/91	6606:05			Normal
		P-06	A	05/01/91	6606:06			Normal

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
F	26	P-07	A	05/01/91	6606:07			Normal
		P-08	A	05/01/91	6606:08			Normal
		P-09	A	05/01/91	6607:09			Normal
		P-10	A	05/01/91	6606:10			Normal
		P-11	A	05/01/91	6606:11			Normal
		P-12	A	05/01/91	6606:12			Normal
		P-13	A	05/01/91	6606:13			Normal
		P-14	A	05/01/91	6606:14			Normal
F	27	A-01	A	04/26/91	5993:01			Normal
		A-02	A	04/26/91	5993:02			Normal
		A-03	A	04/26/91	5993:03			Normal
		A-04	A	04/26/91	5993:04			Normal
		P-01	A	04/26/91	5993:05			Normal
		P-02	A	04/26/91	5993:06			Normal
		P-03	A	04/26/91		5998:01-25		Normal
		P-04	A	04/26/91		5999:01-25		Normal
		P-05	A	04/26/91	5993:07			Normal
		P-06	A	04/26/91	5993:08			Normal
		P-07	A	04/26/91	5993:09			Normal
		P-08	A	04/26/91	5993:10			Normal
		P-09	A	04/26/91	5993:11			Normal
		P-10	A	04/26/91		6600:01-25		Normal
		P-11	A	04/26/91		6601:01-25		Normal
		P-12	A	04/26/91	5993:12			Normal
		P-13	A	04/26/91	5993:13			Normal
		P-14	A	04/26/91	5993:14			Normal
F	28	A-01	A	05/01/91		6613:01-25		Normal
		A-02	A	05/01/91		6614:01-25		Normal
		A-03	A	05/01/91		6615:01-25		Normal
		A-04	A	05/01/91		6616:01-25		Normal
		P-01	A	05/01/91	6607:01			Stains and marks visible on the annulus wall were caused by the inleakage of water.
		P-02	A	05/01/91	6607:02			Normal
		P-03	A	05/01/91	6607:03			Normal
		P-04	A	05/01/91	6607:04			Normal
		P-05	A	05/01/91	6607:05			Normal
		P-06	A	05/01/91	6607:06			Normal
		P-07	A	05/01/91	6607:07			Normal
		P-08	A	05/01/91	6608:01			Normal
		P-09	A	05/01/91	6608:02			Normal
		P-10	A	05/10/91	6633:01			Normal

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
F	28	P-11	A	05/01/91	6608:04			Normal
		P-12	A	05/01/91	6608:05			Normal
		P-13	A	05/01/91	6608:06			Normal
		P-14	A	05/01/91	6608:07			Normal
		B-02	I	04/09/91		5975:01-02		Photographs were made in an attempt to determine what was preventing the TTJ from being fully retracted. The cause was not evident in the photographs.
		C-01	I	04/03/91			VISUAL	Visual inspection was made in an attempt to determine what was preventing the TTJ from being fully retracted. The cause was not apparent.
		C-01	I	04/18/91		5991:01-24		Inspection was made in an attempt to determine what was preventing the TTJ from being fully retracted. The only possible cause observed was dry salt deposits on the jet.
		A-01	A	02/14/91		5849:01-25		Normal
		A-02	A	02/14/91		5850:01-25		Normal
H	29	A-03	A	02/14/91		5851:01-25		Normal
		A-04	A	02/14/91		5852:01-25		Normal
		P-01	A	02/14/91	5848:01			Normal
		P-02	A	02/14/91	5848:02			Normal
		P-03	A	02/14/91	5848:03			Normal
		P-04	A	02/14/91	5848:04			Normal
		P-05	A	02/14/91	5848:05			Normal
		P-06	A	02/14/91	5848:06			Normal
		P-07	A	02/14/91	5848:07			Normal
		P-08	A	02/14/91	5848:08			Normal
		P-09	A	02/14/91	5848:09			Normal
		P-10	A	02/14/91	5848:10			Normal
		P-11	A	02/14/91	5848:11			Normal
		P-12	A	02/14/91	5848:12			Normal
		P-13	A	02/14/91	5848:13			Normal
		P-14	A	02/14/91	5848:14			Normal
H	30	A-01	A	02/20/91		5868:01-25		Normal

APPENDIX B
INSPECTIONS MADE IN 1991

Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	30	A-02	A	02/20/91		5869:01-25		Normal
		A-03	A	02/20/91		5870:01-25		Normal
		A-04	A	02/20/91		5871:01-25		Normal
		P-01	A	02/20/91	5872:01			Normal
		P-02	A	02/20/91	5872:02			Normal
		P-03	A	02/20/91	5872:03			Normal
		P-04	A	02/20/91	5872:04			Normal
		P-05	A	02/20/91	5872:05			Normal
		P-06	A	02/20/91	5872:06			Normal
		P-07	A	02/20/91	5872:07			Normal
		P-08	A	02/20/91	5872:08			Normal
		P-09	A	02/20/91	5872:09			Normal
		P-10	A	02/20/91	5872:10			Normal
		P-11	A	02/20/91	5872:11			Normal
H	31	P-12	A	02/20/91	5872:12			Normal
		P-13	A	02/20/91	5872:13			Normal
		P-14	A	02/20/91	5872:14			Normal
		A-01	A	01/21/91		5873:01-25		Normal
		A-02	A	01/21/91		5874:01-25		Normal
		A-03	A	02/21/91		5875:01-25		Normal
		A-04	A	02/21/91		5876:01-25		Normal
		P-01	I	02/21/91	5877:01			Normal
		P-02	I	02/21/91	5877:02			Normal
		P-03	I	02/21/91	5877:03			Normal
		P-04	I	02/21/91	5877:04			Normal
		P-05	I	02/21/91	5877:05			Normal
		P-06	I	02/21/91	5877:06			Normal
		P-07	I	02/21/91	5877:07			Normal
H	32	P-08	I	02/21/91	5877:08			Normal
		P-09	I	02/21/91	5877:09			Normal
		P-10	I	02/21/91	5877:10			Normal
		P-11	I	02/21/91	5877:11			Normal
		P-12	I	02/21/91	5877:12			Normal
		P-13	I	02/21/91	5877:13			Normal
		P-14	I	02/21/91	5877:14			Normal
		A-01	A	02/22/91		5878:01-25		Normal
		A-02	A	02/22/91		5879:01-25		Normal
		A-03	A	02/22/91		5880:01-25		Stains and calcite deposits visible on the tank wall were caused by the inleakage of water.
		A-04	A	02/22/91		5881:01-25		Normal
		P-01	A	02/22/91	5882:01			Normal

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	32	P-02	A	02/22/91	5882:02			Normal
		P-03	A	02/22/91	5882:03			Normal
		P-04	A	02/22/91	5882:04			Normal
		P-05	A	02/22/91	5882:05			Stains and calcite deposits visible on the annulus wall were caused by the inleakage of water.
		P-06	A	02/22/91	5882:06			Normal
		P-07	A	02/22/91	5882:07			Normal
		P-08	A	02/22/91	5882:08			Normal
		P-09	A	02/22/91	5882:09			Stains and calcite deposits visible on the annulus wall were caused by the inleakage of water.
		P-10	A	02/22/91	5882:10			Normal
		P-11	A	02/22/91	5882:11			Normal
		P-12	A	02/22/91	5882:12			Normal
		P-13	A	02/22/91	5882:13			Normal
		P-14	A	02/22/91	5882:14			Normal
		P-15	A	02/22/91	5882:15			Normal
F	33	A-01	A	05/03/91		6624:01-25		Normal
		A-02	A	05/03/91		6625:01-25		Normal
		A-03	A	05/03/91		6626:01-25		Normal
		A-04	A	05/03/91		6627:01-25		Normal
		P-01	A	05/01/91	6617:01			Normal
		P-02	A	05/01/91	6617:02			Normal
		P-03	A	05/01/91	6617:03			Normal
		P-04	A	05/01/91	6617:04			Normal
		P-05	A	05/02/91	6617:05			Normal
		P-06	A	05/02/91	6617:06			Stains and marks visible on the annulus wall were caused by inleakage of water.
		P-07	A	05/02/91	6617:07			Normal
		P-08	A	05/02/91	6617:08			Normal
		P-09	A	05/02/91	6617:09			Normal
		P-10	A	05/02/91	6617:10			Normal

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INSPECTIONS MADE IN 1991

Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
F	33	P-15	A	05/02/91	6617:15			Normal
		P-16	A	05/02/91	6617:16			Normal
F	34	A-01	A	05/03/91		6628:01-25		Normal
		A-02	A	05/03/91		6629:01-25		Normal
		A-03	A	05/03/91		6630:01-25		Normal
		A-04	A	05/03/91		6631:01-25		Normal
		P-01	A	05/02/91	6618:01			Normal
		P-02	A	05/02/91	6618:02			Normal
		P-03	A	05/02/91	6618:03			Normal
		P-04	A	05/02/91	6618:04			Normal
		P-05	A	05/02/91	6618:05			Normal
		P-06	A	05/02/91	6618:06			Normal
		P-07	A	05/02/91	6618:07			Normal
		P-08	A	05/02/91	6618:08			Normal
		P-09	A	05/02/91	6618:09			Normal
		P-10	A	05/02/91	6618:10			Normal
		P-11	A	05/02/91	6618:11			Normal
		P-12	A	05/02/91	6618:12			Normal
		P-13	A	05/02/91	6618:13			Normal
		P-14	A	05/02/91	6618:14			Normal
		P-15	A	05/02/91	6618:15			Normal
		P-16	A	05/02/91	6618:16			Normal
H	35	A-01	A	02/27/91	5890:01			Normal
		A-02	A	02/27/91	5890:02			Normal
		A-03	A	02/27/91	5890:03			Normal
		A-04	A	02/27/91	5890:04			Normal
		P-01	A	03/08/91		5917:01-25		Stains and marks visible on the annulus floor were caused by the leakage of water.
		P-02	A	02/27/91		5887:01-25		Normal
		P-03	A	02/27/91		5888:01-25		Normal
		P-04	A	02/27/91		5889:01-25		Normal
		P-05	A	02/27/91	5890:05			Normal
		P-06	A	02/27/91	5890:06			Normal
		P-07	A	02/27/91	5890:07			Normal
		P-08	A	02/27/91	5890:08			Normal
		P-09	A	02/27/91	5890:09			Normal
		P-10	A	02/27/91	5890:10			Normal
		P-11	A	02/27/91	5890:11			Normal
		P-12	A	02/27/91	5890:12			Normal
		P-13	A	02/27/91	5890:13			Normal
		P-14	A	02/27/91	5890:14			Normal

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	36	A-01	A	03/01/91	5901:14			Normal
		A-02	A	03/01/91	5901:02			Normal
		A-03	A	03/01/91	5901:06			Normal
		A-04	A	03/01/91	5901:11			Normal
		P-01	A	03/01/91		5897:01-25		Normal
		P-02	A	03/01/91		5989:01-25		Normal
		P-03	A	03/01/91		5899:01-25		Normal
		P-04	A	03/01/91		5900:01-25		Normal
		P-05	A	03/01/91	5901:01			Normal
		P-06	A	03/01/91	5901:03			Normal
		P-07	A	03/01/91	5901:04			Normal
		P-08	A	03/01/91	5901:05			Normal
		P-09	A	03/01/91	5901:07			Normal
		P-10	A	03/01/91	5901:08			Normal
H	37	P-11	A	03/01/91	5901:09			Normal
		P-12	A	03/01/91	5901:10			Normal
		P-13	A	03/01/91	5901:12			Normal
		P-14	A	03/01/91	5901:13			Normal
		A-01	A	02/28/91	5892:01			Normal
		A-02	A	02/28/91	5892:02			Normal
		A-03	A	02/28/91	5892:03			Normal
		A-04	A	10/03/91	6726:01			Normal
		P-01	A	02/28/91		5893:01-25		Normal
		P-02	A	02/28/91		5894:01-25		Normal
		P-03	A	02/28/91		5895:01-25		Normal
		P-04	A	02/28/91		5896:01-25		Normal
		P-05	A	02/28/91	5892:04			Normal
		P-06	A	02/28/91	5892:05			Normal
H	38	P-07	A	02/28/91	5892:06			Normal
		P-08	A	02/28/91	5892:07			Normal
		P-09	A	02/28/91	5892:08			Normal
		P-10		10/03/91	6723:01			Normal
		P-11	A	10/03/91	6724:01			Normal
		P-12	A	10/03/91	6725:01			Normal
		P-13	A	02/28/91	5892:09			Normal
		P-14	A	02/28/91	5892:10			Normal
		A-01	A	01/09/91	5747:01			Normal
		A-02	A	01/09/91	5747:11			Normal
		A-03	A	01/17/91	5776:01			Normal
		A-04	A	01/09/91	5747:12			Normal
		P-01	A	01/09/91		5744:01-25		Normal
		P-02	A	01/31/91		5801:01-25		Normal
		P-03	A	01/17/91		5761:01-25		Normal

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<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	38	P-04	A	01/09/91		5745:01-25		Normal
		P-05	A	01/09/91	5747:02			Normal
		P-06	A	01/09/91	5747:03			Normal
		P-07	A	01/17/91	5776:02			Normal
		P-08	A	01/09/91	5747:04			Normal
		P-09	A	01/09/91	5747:05			Normal
		P-10	A	01/09/91	5747:06			Normal
		P-11	A	01/09/91	5747:07			Normal
		P-12	A	01/09/91	5747:08			Normal
		P-13	A	01/09/91	5747:09			Normal
		P-14	A	01/09/91	5747:10			Normal
H	39	A-01	A	01/17/91	5777:01			Stains and marks visible on the annulus wall were caused by the leakage of water.
		A-02	A	01/17/91	5777:02			Normal
		A-03	A	01/17/91	5777:03			Normal
		A-04	A	01/17/91	5777:04			Normal
		P-01	A	01/17/91	5777:05			Normal
		P-02	A	01/09/91		5746:01-25		Normal
		P-03	A	01/17/91	5777:06			Normal
		P-04	A	01/17/91		5762:01-24		Normal
		P-05	A	01/17/91	5777:07			Normal
		P-06	A	01/17/91		5763:01-25		Normal
		P-07	A	01/17/91	5777:08			Normal
		P-08	A	01/17/91	5777:09			Normal
		P-09	A	01/17/91		5764:01-25		Normal
		P-10	A	01/17/91		5781:01-25		Normal
		P-11	A	01/17/91	5777:10			Normal
		P-12	A	01/17/91	5777:11			Normal
		P-13	A	01/17/91	5777:12			Normal
		P-14	A	01/17/91	5777:13			Normal
H	40	A-01	A	01/10/91	5750:01			Normal
		A-01	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.

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<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	40	A-01	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		A-02	A	01/10/91	5750:04			Normal
		A-02	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.
		A-02	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		A-03	A	01/10/91	5750:07			Normal
		A-03	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.

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<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	40	A-03	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		A-04	A	01/10/91	5750:10			Normal
		A-04	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.
		A-04	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		P-01	A	01/10/91	5750:02			Normal
		P-01	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.

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<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	40	P-01	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		P-02	A	01/17/91	5778:01			Normal
		P-02	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		P-03	A	01/10/91	5750:03			Normal
		P-03	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.
		P-03	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	40	P-04	A	01/17/91	5782:01-25			Normal
		P-04	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.
		P-04	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		P-05	A	01/10/91	5750:05			Normal
		P-05	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.
		P-06	A	01/10/91	5748:01-25			Normal

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	40	P-06	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.
		P-06	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		P-07	A	01/10/91	5750:06			Normal
		P-07	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.
		P-07	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	40	P-08	A	01/10/91	5750:08			Normal
		P-08	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.
		P-08	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		P-09	A	01/10/91	5750:09			Normal
		P-09	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do no leak. When the supply and return valves were closed the coils did not lose pressure.

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	40	P-09	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		P-10	A	01/10/91	5749:01-25			Normal
		P-10	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.
		P-10	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		P-11	A	01/10/91	5750:11			Normal
		P-11	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	40	P-11	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		P-12	A	01/10/91	5750:12			Normal
		P-12	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do no leak. When the supply and return valves were closed the coils did not lose pressure.
		P-12	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		P-13	A	01/10/91	5750:13			Normal
		P-13	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A

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<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	40	P-13	A	04/26/91			VISUAL	subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.
		P-13	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.
		P-14	A	01/10/91	5750:14			Normal
		P-14	A	04/26/91			VISUAL	Test was conducted to determine if failed cooling coils 9, 13, or 20 leaked into the annulus. No leakage into the annulus was observed. A subsequent test indicated that these coils probably do not leak. When the supply and return valves were closed the coils did not lose pressure.
		P-14	A	04/29/91			VISUAL	Test was conducted to determine if cooling coil 11 leaked into the annulus. No leakage into the annulus was observed. This coil leaked; it would not hold pressure with the supply and return valves closed. Evidently the leaksite is located inside the primary vessel.

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	40	B-5	I	10/17/91				Visual inspection was made to investigate cause of the reel tape malfunction. Difficulty was experienced in raising the tape. No obstruction or other cause for the difficulty was apparent.
H	41	A-01	A	01/17/91	5790:01			Normal
		A-02	A	01/17/91	5790:02			Normal
		A-03	A	01/17/91	5790:03			Normal
		A-04	A	01/17/91	5790:04			Normal
		P-01	A	01/31/91		5802:01-25		Normal
		P-02	A	01/31/91		5803:01-25		Normal
		P-03	A	02/13/91		5840:01-24		Normal
		P-04	A	01/17/91		5765:01-24		Normal
		P-05	A	01/17/91	5790:05			Normal
		P-06	A	01/17/91	5790:06			Normal
		P-07	A	01/17/91	5790:07			Normal
		P-08	A	01/17/91	5790:08			Normal
		P-09	A	01/17/91	5790:09			Normal
		P-10	A	01/17/91	5790:10			Normal
		P-11	A	01/17/91	5790:11			Normal
		P-12	A	01/17/91	5790:12			Normal
		P-13	A	01/17/91	5790:13			Normal
		P-14	A	01/17/91	5790:14			Normal
		B-02	I	07/18/91		6696:01-04		Inspection was made to determine if waste was going to tank 41 during transfer from the 2H evaporator to tank 38. No liquid was observed entering the tank during a transfer.
		B-03	I	03/19/91		5938:01-04		Inspection made to determine if absence of liquid under the reel tape riser was the cause or reel tape malfunction. Liquid was observed beneath the riser.
		E-01	I	08/28/91				ACCTV inspection (File Tape 192) was made to document conditions in Tk 41 following a transfer that reduced the liquid level by 9.5 inches.

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<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	42	A-01	A	02/04/91	5811:04			Stains and marks visible in the annulus were caused by the leakage of water.
		A-02	A	02/04/91	5816:02			Normal
		A-03	A	02/04/91	5816:03			Normal
		A-04	A	02/04/91	5816:04			Normal
		P-01	A	02/04/91		5807:01-25		Normal
		P-02	A	02/04/91		5808:01-25		Normal
		P-03	A	02/04/91	5816:05			Normal
		P-04	A	02/04/91	5816:06			Normal
		P-05	A	02/04/91	5816:07			Normal
		P-06	A	02/04/91	5816:08			Normal
		P-07	A	02/04/91	5816:09			Normal
		P-08	A	02/04/91	5816:10			Normal
		P-09	A	02/04/91		5809:01-25		Normal
		P-10	A	02/04/91		5810:01-25		Normal
		P-11	A	02/04/91	5816:01			Normal
		P-12	A	02/04/91	5811:01			Normal
		P-13	A	02/04/91	5811:02			Normal
		P-14	A	02/04/91	5811:03			Stains and marks visible in the annulus were caused by the leakage of water.
H	43	A-01	A	01/31/91	5806:01			Normal
		A-02	A	01/31/91	5806:02			Normal
		A-03	A	01/31/91	5806:03			Normal
		A-04	A	01/31/91	5806:04			Normal
		P-01	A	02/13/91		5841:01-25		Normal
		P-02	A	02/13/91		5842:01-25		Normal
		P-03	A	01/31/91		5804:01-25		Normal
		P-04	A	01/31/91		5805:01-25		Normal
		P-05	A	01/31/91	5806:05			Normal
		P-06	A	01/31/91	5806:06			Normal
		P-07	A	01/31/91	5806:07			Normal
		P-08	A	01/31/91	5806:08			Normal
		P-09	A	01/31/91	5806:09			Normal
		P-10	A	01/31/91	5806:10			Normal
		P-11	A	01/31/91	5806:11			Normal
		P-12	A	01/31/91	5806:12			Normal
		P-13	A	01/31/91	5806:13			Normal

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	43	P-14	A	01/31/91	5806:14			Normal
F	44	A-01	A	01/14/91	5751:02			Normal
		A-02	A	01/14/91	5751:13			Normal
		A-03	A	01/14/91	5751:10			Normal
		A-04	A	01/14/91	5751:06			Normal
		P-01	A	01/14/91	5751:03			Normal
		P-02	A	01/14/91	5751:01			Normal
		P-02	A	01/23/91		5791:01-25		Normal
		P-03	A	01/18/91		5783:01-25		Normal
		P-04	A	01/18/91		5784:01-25		Normal
		P-05	A	01/14/91		5753:01-25		Normal
		P-06	A	01/14/91		5754:01-25		Normal
		P-07	A	01/14/91		5755:01-25		Normal
		P-08	A	01/14/91	5751:12			Normal
		P-09	A	01/14/91	5751:11			Normal
		P-10	A	01/14/91	5751:09			Normal
		P-11	A	01/14/91	5751:08			Normal
		P-12	A	01/14/91	5751:07			Normal
		P-13	A	01/14/91	5751:05			Normal
		P-14	A	01/14/91	5751:04			Normal
F	45	A-01	A	01/14/91	5752:04			Normal
		A-02	A	01/14/91	5752:02			Normal
		A-03	A	01/14/91	5752:12			Normal
		A-04	A	01/14/91	5752:08			Normal
		P-01	A	01/14/91	5752:05			Normal
		P-02	A	01/14/91	5752:03			Stains and marks visible in the annulus were caused by the <u>inleakage of water.</u>
		P-03	A	01/18/91		5785:01-25		Stains and calcite deposits visible on the tank wall were caused by the inleakage of water.
		P-03	A	02/01/91		5800:01-07		The water that caused the stains and calcite deposits observed on 1-18-91 entered the annulus at the junction of the tank top and the overlapping annulus cover plates.
		P-03	A	02/11/91			VISUAL	A test was conducted to determine if a flush water line leak could have been the source of water causing the stains and calcite deposits

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<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
F	45	P-03	A	02/11/91			VISUAL	observed in the annulus on 1-18-91. No leakage into the annulus was observed after the flush water valve was opened.
		P-03	A	02/12/91			VISUAL	The test was continued with flush water valve open for 24 hours. Still no leakage into the annulus was observed. Another test was conducted to determine if rainwater could enter the annulus at this location. The tank top in the area of the P3 riser was flooded with water. Subsequent inspection showed no water had leaked into the annulus. Operations personnel indicated that an underground steam leak occurred near the P3 riser in 1989 and was probably the cause of the stains and deposits observed 1-18-91.
		P-04	A	01/18/91		5786:01-25		Normal
		P-05	A	01/18/91		5787:01-25		Normal
		P-06	A	01/18/91		5788:01-25		Normal
		P-07	A	01/18/91		5789:01-25		Normal
		P-08	A	01/14/91	5752:01			Normal
		P-09	A	01/14/91	5752:13			Normal
		P-10	A	01/14/91	5752:11			Normal
		P-11	A	01/14/91	5752:10			Normal
		P-12	A	01/14/91	5752:09			Normal
		P-13	A	01/14/91	5752:07			Normal
		P-14	A	01/14/91	5752:06			Normal
		A-01	A	01/15/91	5779:01			The tank and annulus condition was normal. However, a plastic bag was observed on the annulus floor.

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
F	46	A-02	A	01/15/91	5779:02			Normal
		A-03	A	01/15/91	5779:03			Normal
		A-04	A	01/15/91	5779:04			Normal
		P-01	A	01/15/91	5779:05			Normal
		P-02	A	01/15/91	5779:06			Normal
		P-03	A	01/15/91		5766:01-25		Normal
		P-04	A	01/15/91		5767:01-25		Normal
		P-05	A	01/15/91		5768:01-25		Normal
		P-06	A	01/15/91		5769:01-25		Normal
		P-07	A	01/15/91		5770:01-25		Stains and marks visible in the annulus were caused by the inleakage of water.
		P-08	A	01/15/91	5779:07			Normal
		P-09	A	01/15/91	5779:08			Normal
		P-10	A	01/15/91	5779:09			Normal
		P-11	A	01/15/91	5779:10			Normal
F	47	P-12	A	01/15/91	5779:11			Normal
		P-13	A	01/15/91	5779:12			Normal
		P-14	A	01/15/91	5779:13			Normal
		A-01	A	01/15/91	5780:01			Normal
		A-02	A	01/15/91	5780:02			Normal
		A-03	A	01/15/91	5780:03			Normal
		A-04	A	01/15/91	5780:04			Normal
		P-01	A	01/15/91	5780:05			Normal
		P-02	A	01/15/91	5780:06			Normal
		P-03	A	01/15/91		5771:01-25		Normal
		P-04	A	01/15/91		5772:01-25		Normal
		P-05	A	01/15/91		5773:01-25		Normal
		P-06	A	01/15/91		5774:01-25		Normal
		P-07	A	01/15/91		5775:01-25		Normal
		P-08	A	01/15/91	5780:07			Normal
H	48	P-09	A	01/15/91	5780:08			Normal
		P-10	A	01/15/91	5780:09			Normal
		P-11	A	01/15/91	5780:10			Normal
		P-12	A	01/15/91	5780:11			Normal
		P-13	A	01/15/91	5780:12			Normal
		P-14	A	01/15/91	5780:13			Normal
		A-01	A	02/11/91	5846:01			Normal
		A-02	A	02/26/91	5891:01			Normal
		A-03	A	02/26/91	5891:02			Normal
		A-04	A	02/11/91	5846:02			Normal
		P-01	A	02/11/91	5846:03			Normal

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<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	48	P-02	A	02/11/91	5846:04			Normal
		P-03	A	02/11/91		5831:01-25		Normal
		P-04	A	02/11/91		5832:01-25		Normal
		P-05	A	02/13/91		5843:01-25		Normal
		P-06	A	02/26/91	5891:03			Water that leaked into the annulus and cascaded down the annulus wall during the leak tests that were performed in 1990 on November 1-6, 8-9, 12-16, 20-21, and 26 had changed the appearance of the tank wall, i.e., removed most of the sodium dichromate and calcite deposits from the wall. These were deposits formed on the tank wall before cooling water was valved off when the coils originally leaked.
		P-07	A	02/26/91	5891:04			Water that leaked into the annulus and cascaded down the tank wall during the leak tests that were performed in 1990 on November 1-6, 8-9, 12-16, 20-21, and 26 had changed the appearance of the tank wall, i.e., removed most of the sodium dichromate and calcite deposits from the wall. These were deposits formed on the tank wall before cooling water was valved off when the coils originally leaked.
		P-08	A	02/26/91	5891:05			Water that leaked into the annulus and cascaded down the tank wall during the leak tests that were performed in 1990 on November 1-6, 8-9, 12-16, 20-21, and 26 had changed the appearance of the tank wall, i.e., removed most of the sodium dichromate and calcite deposits from the wall. These were deposits

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	48	P-08	A	02/26/91	5891:05			formed on the tank wall before cooling water was valved off when the coils originally leaked.
		P-09	A	02/26/91	5891:06			Normal
		P-10	A	02/13/91		5844:01-25		Normal
		P-11	A	02/11/91	5846:05			Normal
		P-12	A	02/11/91	5846:06			Normal
		P-13	A	02/11/91	5846:07			Normal
		P-14	A	02/11/91	5846:08			Normal
		A-01	A	02/08/91	5838:01			Normal
		A-02	A	02/08/91	5838:02			Normal
		A-03	A	02/08/91	5838:03			Normal
		A-04	A	02/08/91	5838:04			Normal
		P-01	A	02/08/91	5838:05			Normal
		P-02	A	02/08/91	5838:06			Normal
		P-03	A	02/08/91		5822:01-25		Normal
H	49	P-04	A	02/08/91		5823:01-25		Normal
		P-05	A	02/08/91		5824:01-25		Normal
		P-06	A	02/08/91		5825:01-25		Normal
		P-07	A	02/08/91		5826:01-25		Normal
		P-08	A	02/08/91	5838:07			Normal
		P-09	A	02/08/91	5838:08			Normal
		P-10	A	02/08/91	5838:09			Normal
		P-11	A	02/08/91	5838:10			Normal
		P-12	A	02/08/91	5838:11			Normal
		P-13	A	02/08/91	5838:12			Normal
		P-14	A	02/08/91	5838:13			Normal
		A-01	A	02/08/91	5839:01			Normal
		A-01	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		A-02	A	02/08/91	5839:02			Normal
H	50	A-01	A	02/08/91	5839:01			Normal
		A-01	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		A-02	A	02/08/91	5839:02			Normal

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					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	50	A-02	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		A-03	A	02/08/91	5839:03			Stains and calcite deposits visible on the tank wall were caused by the inleakage of water.
		A-03	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. Inspection revealed water cascading down the tank wall into the annulus.
		A-03	A	04/25/91			VISUAL	Test was conducted to determine if failed cooling coil 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		A-04	A	02/08/91	5839:04			Normal
		A-04	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		P-01	A	02/08/91	5839:05			Normal
		P-01	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		P-02	A	02/08/91	5839:06			Normal
		P-02	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.

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					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	50	P-03	A	02/08/91	5834:01-25			Normal
		P-03	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		P-04	A	02/08/91	5835:01-25			Normal
		P-04	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		P-05	A	02/08/91	5836:01-25			Normal
		P-05	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		P-06	A	02/13/91	5845:01-25			Normal
		P-06	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		P-07	A	02/08/91	5837:01-25			Normal
		P-07	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. Inspection revealed water cascading down the tank wall into the annulus.
		P-07	A	04/24/91			VISUAL	Test was conducted to determine if failed cooling coil 1 leaked into the annulus. Inspection revealed water cascading down the tank wall into the annulus.

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					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	50	P-07	A	04/25/91			VISUAL	Test was conducted to determine if failed cooling coil 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		P-08	A	02/08/91	5839:07			Normal
		P-08	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		P-09	A	02/08/91	5839:08			Stains and calcite deposits visible on the tank wall were caused by the inleakage of water.
		P-09	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. Inspection revealed water cascading down the tank wall into the annulus.
		P-09	A	04/24/91			VISUAL	Test was conducted to determine if failed cooling coil 1 leaked into the annulus. Inspection revealed water cascading down the tank wall into the annulus.
		P-09	A	04/25/91			VISUAL	Test was conducted to determine if failed cooling coil 8 leaked into the annulus. Inspection revealed water cascading down the tank wall into the annulus.
		P-10	A	02/08/91	5839:09			Normal

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					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
H	50	P-10	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		P-11	A	02/08/91	5839:10			Normal
		P-11	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		P-12	A	02/08/91	5839:11			Normal
		P-12	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		P-13	A	02/08/91	5839:12			Normal
		P-13	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		P-14	A	02/08/91	5839:13			Normal
		P-14	A	04/22/91			VISUAL	Test was conducted to determine if failed cooling coils 1 & 8 leaked into the annulus. No leakage into the annulus was observed at this location.
		A-01	A	02/08/91	5847:01			Normal
		A-02	A	02/04/91	5817:01			Normal
		A-03	A	02/04/91	5817:02			Normal
		A-04	A	02/04/91	5817:03			Normal

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Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
H	51	P-01	A	02/08/91	5847:02			Normal
		P-02	A	02/08/91	5847:03			Normal
		P-03	A	02/04/91		5812:01-25		Normal
		P-04	A	02/04/91		5813:01-25		Normal
		P-05	A	02/04/91		5814:01-25		Normal
		P-06	A	02/11/91		5833:01-25		Normal
		P-07	A	02/04/91		5815:01-25		Normal
		P-08	A	02/04/91	5817:04			Normal
		P-09	A	02/04/91	5817:05			Normal
		P-10	A	02/04/91	5817:06			Normal
		P-11	A	02/04/91	5817:07			Normal
		P-12	A	02/08/91	5847:04			Normal
		P-13	A	02/08/91	5847:05			Normal
		P-14	A	02/08/91	5847:06			Normal
H	DB1			06/14/91				CCTV inspection made to identify jumpers and document jumper configuration in the diversion box.
H	ERIP	1H		04/08/91		5974:01-36		Normal
F	ERIP	2F		06/18/91		6672:01-72		Normal
H	ERIP	2H		04/10/91		5977:01-72		Normal
F	ERIP	5F		05/08/91		6632:01-18		Normal
H	ERIP	5H		04/11/91		5978:01-35		Normal
F	ERIP	6F		05/24/91		6638:01-54		Normal
H	ERIP	6H		04/17/91		5986:01-36		Normal
		7H		04/15/91		5979:01-54		Normal
F	EVAP	2F		01/25/91				CCTV used to check integrity of the 4-inch-diameter vertical pipe to the 241-16F evaporator underliner sump. No evidence of failure was observed. A circumferential weld was observed approximately 3 1/2 feet below the top of the pipe.
		2F		01/28/91		5799:01-23		A more detailed follow-up inspection revealed no evidence of failure in the pipe or the leak detection box.

**APPENDIX B
INSPECTIONS MADE IN 1991**

<u>Area</u>	<u>Tank or Vessel</u>	<u>Inspection Port</u>	<u>Annulus or Interior</u>	<u>Date</u>	<u>Type of Inspection and Identification Numbers</u>			<u>Remarks</u>
					<u>WAP</u>	<u>DP</u>	<u>PSP</u>	
F	WHIP 3			08/05/91				A CCTV inspection (File Tape 190) was made to document conditions at WHIP 3 access pipe. The WHIP (Waste Header Inspection Port) access pipe was extensively corroded. Liquid at the bottom of the WHIP pipe prevented observations in the waste header encasement.
F	WHIP 4			08/05/91				A CCTV inspection (File Tape 190) was made to document conditions at WHIP 4 access pipe. The WHIP (Waste Header Inspection Port) access pipe was in good condition. The waste header pipe in the encasement was in good condition. The encasement was dry.
				08/06/91				A CCTV inspection (File Tape 190) was made to verify test results at WHIP 4. A test was conducted to determine if surface water could enter the waste header at WHIP 3 (Waste Header Inspection Port). About 9,000 gallons of water was applied to the ground above the header at WHIP 3. Subsequent inspection downflow of WHIP 3 at WHIP 4 revealed no water in the header.
				08/07/91				A CCTV inspection (File Tape 190) was made to document conditions at WHIP 4. This follow-up inspection was made after test on the previous day. Still no water was

**APPENDIX B
INSPECTIONS MADE IN 1991**

Area	Tank or Vessel	Inspection Port	Annulus or Interior	Date	Type of Inspection and Identification Numbers			Remarks
					WAP	DP	PSP	
<u>F</u>	<u>WHIP 4</u>			<u>08/07/91</u>				<u>observed at WHIP 4.</u>

The numbers listed under WAP, DP, and PSP identify photographs in the WMT files.
WAP = wide angle photography; DP = direct photography; PSP = periscopic photography;
DB = diversion box; ERIP = encasement riser inspection port; EVAP = waste evaporator; WHIP = waste header inspection port

**DATE
FILMED**

8 / 19 / 93

END