CBS Corporation

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Subject: CBS Corporation
Westinghouse Test Reactor TR-2; Docket No. 50-22
1999 Annual Report

In accordance with Section 6.6.1 of the Westinghouse Test Reactor (TR-2) Technical Specifications, a written annual report covering the status of the Test Reactor decommissioning is attached. The report covers the period beginning January 1, 1999 through December 31, 1999.

Also, pursuant to 10CFR50.59(2) and as specified in 10CFR50.4, a brief description of the changes made in 1999 to the TR-2 license under the provisions of 10 CFR 50.59, including a summary of the safety evaluation, has been incorporated.

If you have any questions regarding this matter, please contact me at the above address and telephone number or contact Mr. Robert Sisk at (724) 722-5065.

Sincerely,

Richard K. Smith
Director - Environmental Remediation
CBS Corporation

Attachment 1 - 1999 Annual Report

A020

cc:

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Copies transmitted: 3 notarized and 5 conformed

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF ALLEGHENY)

Before me, the undersigned notary public, this day personally appeared Richard K. Smith, CBS Corporation, 11 Stanwix Street, Pittsburgh, PA 15222, to me known, who being duly sworn according to law, deposes and says: that the statements sworn to in this letter and attachment are correct and accurate to the best of his knowledge.

Richard K. Smith

Signature of affiant

Subscribed and sworn to before me
this 14th day of March, 2000

Mary A. Bishop

Notary Public

Notarial Seal
Mary A. Bishop, Notary Public
Pittsburgh, Allegheny County
My Commission Expires Feb. 25, 2002

Attachment 1

1999 Annual Report
for the
Waltz Mill Facility
Westinghouse Test Reactor
License No. TR-2
Docket No. 50-22

CBS Corporation

January 1, 1999 - December 31, 1999

1999 ANNUAL INSPECTION REPORT FOR RETIRED WESTINGHOUSE TEST REACTOR

U.S.N.R.C. LICENSE TR-2

DOCKET 50-22

EXECUTIVE SUMMARY

During the reporting period of January 1, 1999 through December 31, 1999 the Waltz Mill Decommissioning Project Team (WMDT) continued implementing the Westinghouse Test Reactor (WTR) Decommissioning Plan as approved by the NRC in Amendment 8 of the TR-2 License. The objective of the approved decommissioning plan is to terminate the TR-2 License. As described in the Decommissioning Plan, this is to be accomplished by removing the reactor tank, its internals and portions of the biological shield. This objective will also be met by providing the NRC sufficient documentation to demonstrate that the license termination requirements have been met including all documentation required for transferring the remaining residual radioactivity and WTR Facilities to the SNM-770 License.

Site decommissioning activities are conducted in accordance with approved procedures, work packages and the TR-2 License. All WTR work packages are reviewed and approved by the TR-2 Radiation Safety Committee (RSC). The RSC monitors decommissioning operations to ensure they are performed safely and according to federal, state and local regulatory requirements (NRC, EPA, PADEP, DOT, etc.).

Both site and project radiological controls personnel continue to monitor the radiological conditions at the site to assure protection of the health and safety of the general public and site personnel.

This report reviews those activities as required by the Technical Specifications Section 6.6.1 and includes the following:

1. A narrative summary of facility activities.

2. Tabulation of the major preventative and corrective maintenance operations having safety significance.

3. A brief description of major changes in the reactor facility and procedures and activities significantly different from those performed previously and not described in the safety analysis report, and a summary of the safety evaluation that shows no unreviewed safety questions were involved. (per 10CFR50.59(2))

4. A summary of the nature and amount of radioactive effluents released or discharged to the environs beyond the effective controls of the licensee as determined at or before the point of such releases or discharge. The summary shall include to the extent practical, an estimate of the major individual radionuclides present in the effluent. If the estimated average release after dilution or diffusion is less than 25% of the concentration allowed or recommended, a statement to this effect is sufficient.

5. A summarized result of the environmental survey performed outside the facility.

1. **A Narrative Summary of Facility Activities.**

Facility Operations

In 1999, the Waltz Mill Decommissioning Team (WMDT) began to implement the Westinghouse Test Reactor Decommissioning Plan as approved by the U.S. Nuclear Regulatory Commission by Amendment 8 to the TR-2 License on September 30, 1998. A majority of the work performed was in preparation for removing the reactor tank, its internals and portions of the biological shielding. Some general area decontamination and clean up was also performed. A list of significant activities is provided below:

- Installed crash bar doors in the Annex basement for both of the WTR entrances for emergency egress from the WTR.
- Installed distribution panels and electrical power feeds through the containment.
- Installed HEPA ventilation system for the containment. Performed flow testing of the system to assure it met design requirements.
- Installed lighting and exit signs in the containment.
- Installed fire protection system, piping and hose stands in the WTR.
- Installed sheet metal covers over the transfer canal inside of the containment.
- Completed asbestos abatement of accessible areas in the containment.
- Repaired the roll-up door between the Truck Lock and containment and installed a man door with crash bar for emergency egress.
- Conducted additional characterization surveys of the reactor tank and its internals.
- Collected core samples from the bioshield.
- Refurbished and load tested the Polar Crane.
- Removed Sub-pile Room rabbit tube and other systems.
- Removed the retired electrical systems.
- Completed brush removal and track upgrade on the rail spur to the site.
- Completed draining lead shot from underneath the reactor tank (removed 16 55-gal. drums).
- Removed structures and platforms at the top of the bioshield.
- Removed miscellaneous inactive piping inside containment.
- Removed the retired ventilation system ductwork.
- Removed water from East Test Loop Dump Tank Pit and Primary Coolant Tunnel.
- Completed removal of all equipment from the East and West Test Loop Dump Tank Pits.
- Removed piping, equipment and debris from the 3 Test Loop Cubicles.
- Removed miscellaneous equipment as required for bioshield cutting.
- Removed reactor beam port outer shield.
- Completed core boring and began wire saw cutting the bioshield.
- Installed a new access to the primary coolant tunnel and installed a jib crane.

In addition to the preparatory work performed on the test reactor and its containment, on December 15, 1999 CBS submitted an application to the USDOT for an exemption from portions of 49CFR173 to ship the WTR reactor tank. This exemption will allow shipping the WTR reactor tank as a strong-tight package to a licensed waste processor where it will be cut into pieces and packaged for disposal at either the Envirocare Facility in Clive, UT or the Chem-Nuclear Facility in Barnwell, SC.

Plans for removing, transporting, and disposing of the reactor tank were presented to the DOT/NRC in a meeting on March 30, 1999.

East Test Loop Dump Tank Pit

In a March 20, 1999 letter from Mr. A.J. Nardi of Westinghouse to Mr. T.S. Michaels of the USNRC, a commitment was made to dewater the East Test Loop Dump Tank Pit as a normal maintenance item when a water processing system became available.

The East Test Loop Dump Tank Pit has been dewatered, cleaned of debris and initial entry surveys completed. Dose rates in the pit were 0.5 mR/hr prior to debris removal and remained at this level following debris removal. Decontamination of the pit has been completed.

Transfer Canal

The water level and activity level of the water in the transfer canal continues to be monitored. The canal water was sampled and found to have a gross beta activity of 4.25×10^{-6} µCi/ml. The canal water sample was analyzed for specific radionuclides and gave the following results:

Nuclide	1999 µCi/ml	1998 µCi/ml	1997 µCi/ml	1996 µCi/ml	1995 µCi/ml
Cobalt-60	5.49×10^{-7}	1.3×10^{-7}	1.4×10^{-7}	2.0×10^{-7}	1.8×10^{-7}
Cesium-137	2.94×10^{-6}	1.3×10^{-7}	4.7×10^{-7}	4.1×10^{-7}	1.6×10^{-7}
Cesium-134	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Strontium-90	8.69×10^{-7}	1.1×10^{-8}	3.3×10^{-8}	1.4×10^{-7}	5.2×10^{-8}

As part of the WTR decommissioning project, preparations are being made to drain and decontaminate the transfer canal. The canal recirculation system has been disconnected. This activity is scheduled for completion in the year 2000.

ALARA Data

All decommissioning activities were planned and conducted in accordance with the site ALARA policy and comprehensive safety programs. WMDT places the highest priority on conducting the Waltz Mill Decommissioning Project safely and maintaining exposure to ionizing radiation ALARA. An ALARA summary for the WTR facilities Decommissioning activities is provided in attached Table A.

Regulatory Interfaces

Throughout the year, the licensee communicated frequently with the USNRC. These communications took place via written correspondence, telephone calls and meetings. Significant results are noted below:

- NRC headquarters conducted a routine inspection of TR-2 decommissioning activities on February 3, 1999. Various aspects of the WTR operations, maintenance , safety and emergency preparedness programs were inspected, including selective examinations of procedures, and representative records , interviews with personnel and observation of the facility. No non-compliances or significant issues were identified.

- Amendment 9 to the TR-2 License which changed the name of the licensee to CBS Corporation was issued on March 25, 1999.

- 1998 Annual Report for the TR-2 License was issued in June

- CBS and Westinghouse began submitting periodic updates to the NRC on the status of the decommissioning projects underway at Waltz Mill in September.

- NRC headquarters conducted a routine inspection of TR-2 decommissioning activities on October 27-28. No non-compliances or significant issues were identified

- In response to an application for an amendment to the TR-2 facility license from CBS dated September 7, 1999, the NRC issued Amendment 10 to the TR-2 License addressing organizational changes in the WTR Decommissioning Plan on November 23, 1999

- In response to an application for an amendment to the TR-2 License dated September 15, and as supplemented on October 4, 1999, the NRC issued Amendment 11 to the TR-2 License on December 7, 1999 modifying the decommissioning Technical Specifications dealing with controls for ingress, egress and equipment removal from containment.

Radiation Safety Committee Activities

The Radiation Safety Committee (RSC) for the TR-2 license provided management oversight and review of the WTR decommissioning activities. During 1999, the RSC met ten times, and among other activities, reviewed WTR work packages prior to their implementation; proposed changes to the facility and its technical specifications; reviewed procedures and their revisions that could have a significant impact on radiation safety; and reviewed and approved pursuant to 10CFR50.59 that the proposed activities would not constitute a change in the technical specifications or an unreviewed safety question without prior NRC approval.

Pursuant to 10CFR50.59, the RSC reviewed a proposed change to the NRC approved Decommissioning Plan for the Westinghouse Test Reactor to determine if the proposed activity would constitute a change to the technical specifications or an unreviewed safety question. The proposed change would allow the WTR reactor tank to be removed in one piece through the Truck Lock (option 3) rather than cutting it in sections in containment (option 2) or lifting a single piece through the containment dome (option 1). Upon completion of the review of the safety evaluation, the RSC determined that the proposed change did not constitute an unreviewed safety question or a change to the Technical Specifications. See also item 3 below.

In accordance with the Section 6.2.4 of the TR-2 Technical Specifications, the RSC conducted independent audits of decommissioning activities - specifically, an audit of "facility activities for conformance to the Technical Specifications and License" (6.2.4.1) and "The results of actions taken to correct those deficiencies that may occur in the reactor facility equipment, systems, structures or methods of operations that affect facility safety" (6.2.4.3). These audits were performed on December 16 and 17, 1999. Audit deficiencies were documented and corrective actions were immediately initiated by the project. The auditors concluded that the WTR facility activities were being conducted in accordance with the Technical Specifications and the License.

Organizational Changes

Several organization changes took place in 1999. As a result of CBS Corporation's divestiture of the Westinghouse Electric Company, the name of the TR-2 Licensee was changed from "CBS Corporation acting through its Westinghouse Electric Company Division" to CBS Corporation. As a further result, the Waltz Mill Site Manager's position was eliminated and the applicable responsibilities were assigned to the CBS Decommissioning Project Manager. Finally, the position of Waltz Mill Decommissioning Program Manager was reassigned.

The current management organization relative to the administration of License TR-2 is as follows:

- Broadus Bowman, CBS Decommissioning Project Director, is the senior site manager having responsibility for the retired WTR facilities.

- Russell G. Cline remains as the Manager, Industrial Hygiene, Safety, and Environmental Compliance (IHSEC).
- Wayne .D. Vogel, Radiation Safety Officer, reports directly to Mr. Cline.

A current organizational chart is attached.

Summary

In summary, work on the TR-2 Decommissioning Plan has been authorized by the NRC. Work on Phase I, Facility Preparations & Engineering, is complete except for issuing the final engineering report on the reactor tank removal. The engineering report is scheduled to be issued in March 2000. In Phase II, Reactor Tank Removal, platform and structural interference and bioshield removal are in progress. Phase II is scheduled to be complete in May 2000. Phase III, Building & Structures Remediation, is in progress and scheduled to complete in the third quarter of 2000. Work remains on schedule to ship the reactor tank in May 2000. A current project schedule is attached.

2. **Tabulation of the major preventative and corrective maintenance operations having safety significance.**

Since reactor fuel was removed from the reactor and the site decades ago, the Westinghouse Test Reactor as described in the Decommissioning plan and in the Technical Specifications does not contain any nuclear safety related equipment.

In order to support decommissioning activities within the containment, a new ventilation system was installed. A Fire Hazard Analysis was prepared in accordance with 10CFR50.48, and industrial safety systems were installed or upgraded (access, lighting, fire protection, etc.) as necessary to provide a safe work environment.

Therefore a tabulation of the major preventative and corrective maintenance operations having safety significance has been limited to the ventilation system and is as follows:

- A wire from the makeup air unit heat detector was found on December 27, 1999, to be defective during a routine surveillance and was immediately repaired.

3. **A brief description of major changes in the reactor facility and procedures and activities significantly different from those performed previously and not described in the safety analysis report, and a summary of the safety evaluation that shows no unreviewed safety questions were involved.**

Pursuant to 10CFR50.59 (2) and as specified in 10CFR50.4, the following provides a brief description of the changes made in 1999 to the TR-2 license under the provisions of 10 CFR 50.59 and includes a summary of the safety evaluation that was performed.

In 1999, license reviews of work packages and procedures were performed to provide administrative controls over physical or procedural activities to preclude adverse impacts on the safe dismantling and decommissioning operations conducted under the TR-2 License. During this time, only one proposed activity required a safety evaluation pursuant to 10 CFR50.59.

Proposed change to the WTR Decommissioning Plan

A 10 CFR 50.59 Safety Evaluation on a proposed change to the TR-2 Decommissioning Plan to revise the preparation and removal methods for the reactor tank was conducted and reviewed by the TR-2 Radiation Safety Committee (RSC). The RSC concluded that, based on the information provided in the meeting and in previous meetings, a change to the Technical Specifications is not needed to implement the proposed change and the proposed change does not constitute an unreviewed safety question.

The proposed change to the WTR Decommissioning Plan applied to Section 2.1 - "Choice of Decommissioning Methods and Description of Activities" and Section 2.2 - "Decommissioning Objectives, Methods and Schedule." The WMDT developed an alternative approach to the removal of the WTR reactor tank. This approach combined some of the features of Option 1 and Option 2 described in the Decommissioning Plan to allow the removal of the reactor tank in one piece through the Truck Lock. This approach was determined to be safer, simpler, ALARA and more cost effective.

The proposed option reduced both the total weight and the total activity, which would be lifted in containment at one time. In addition, the height from which the tank and biological shield blocks (bioshield) would be suspended has been reduced. The proposed option also eliminated the need to install a large (10-12 foot) hole in containment significantly reducing the probability of contamination from containment being released into the environment. By eliminating the need to cut a hole in the containment dome, the proposed option would more effectively maintain the integrity of the containment during the decommissioning. By removing the tank in one piece the potential for spreading loose surface and airborne contamination through the cutting, processing and packaging of the tank while it is in containment was also reduced.

Safety Evaluation

As a part of the safety evaluations the following studies were conducted:

1. An analysis was performed to verify that the reactor core hold down lugs would be adequate to withstand the effects from transportation loads. The conclusion drawn from this analysis was that all stresses at the shell and core support are within acceptable limits. In addition, the core anchor lugs were determined to be sufficient for restraining the core structure in place during transportation.

2. Westinghouse conducted a test on the adhesive quality of a strippable coating on stainless steel and its ability to restrain the movement of small loose objects in the reactor tank. Results of the test indicated that the proposed strippable coating would adequately retard or constrain the movement of small loose objects in the reactor tank during the short duration required to transport the reactor tank to a waste processor.

3. A dose/shielding analysis was conducted on the shipping package. Based on the proposed package configuration, the reactor tank shipping package could be handled safely and would meet transportation dose requirements of:

   ⇒ 1 rem/hr at 3 meters from unshielded material
   ⇒ 200 mrem at any point on the external package surface.
   ⇒ 10 mrem at any point 2 meters from the outer lateral surfaces

4. An analysis was conducted to determine the effects from down-ending, impact and transportation loads to ensure that the strong, tight shipping package integrity is maintained. Based on this analysis, all results were within acceptable limits. The limiting design was for the transportation conditions. The package design met all of the analyzed stress requirements.

5. An analysis was performed to verify the adequacy of the Truck Lock platform to support the anticipated loads from loaded trucks, forklifts, lifting and rigging equipment and the reactor tank as it is being down-ended and removed from containment. Based on the results of this analysis, the estimated loading on the Truck Lock platform could have exceeded its design capacity. Temporary shoring system for the reactor removal process will be installed.

6. An evaluation of the impact of unloading the foundation as the concrete and reactor tank are removed was also conducted. Two conditions were considered (1) uplift due to buoyancy and (2) uplift due to rebound of the foundation bedrock. In both cases, no adverse effects on the canal structure are anticipated.

7. An analysis to determine the effects of impacting the reactor tank with a concrete block was performed. This evaluation showed that an inadvertent bump of the tank would not cause the tank to topple or cause a breach in the tank wall.

8. An evaluation on the impact that the proposed option would have on the accident analysis described in the Decommissioning Plan was conducted. This evaluation showed that the proposed option could be conducted within the scope of the existing accident analyses.

9. An ALARA analysis of the proposed option was conducted and shown to be comparable to the other options described in the Decommissioning plan.

Conclusion

Based on this evaluation, the RSC determined that the proposed change does not represent an unreviewed safety question and can be implemented under the provisions of 10 CFR 50.59.

4. **A summary of the nature and amount of radioactive effluents released or discharged to the environs beyond the effective controls of the licensee as determined at or before the point of such releases or discharge. The summary shall include to the extent practical, an estimate of the major individual radionuclides present in the effluent. If the estimated average release after dilution or diffusion is less than 25% of the concentration allowed or recommended, a statement to this effect is sufficient.**

Low Level Radioactive Waste

Low-level radioactive solid debris and dry active waste from the WTR was collected, packaged and transported for either processing or burial at a licensed facility. During 1999, 20,565 cubic feet of LLW containing 0.713 Ci was shipped for disposal. All LLW was shipped to GTS Duratek in Oak Ridge, TN for processing and volume reduction. The 1999 waste shipments are summarized in attached Table B.

All contaminated liquids from the WTR were collected and processed through a on-site water treatment system. In 1999, the primary source of water collected for processing was from ground water in-leakage into pits and tunnels. All water collected was processed, analyzed and shipped to a public sanitary sewage treatment facility in accordance with 10CFR20.2003. A total of 26,725 gallons of water were processed. The total activity discharge was less than 10% of the 10 CFR 20, Appendix B, Table 3 limits. The total activity discharged was less than 0.00005 Ci. A summary is provided in attached Table C.

Airborne Releases

In order to support decommissioning activities in the WTR, a HEPA ventilation unit was installed to maintain negative pressure in containment and to provide for a controlled and monitored discharge of airborne activity. The stack is continuously monitored for air particulate. The filter samples are typically collected weekly and analyzed for gross beta and alpha activity. The average monthly concentration is then determined from this data. During 1999, the estimated average release measured at the point of discharge was less than 25% of the 10 CFR 20, Table 2, Column 2 concentration. This determination was made using the most restrictive radionuclides possibly present (Sr-90/Pu-239). A summary of the releases from the WTR ventilation system is summarized in Table D.

In accordance with Regulatory Guide 4.20, "Constraint on Releases of Airborne Radioactive Materials to The Environment For Licensees Other Than Power Reactors" the facility is in compliance with 10 CFR 20.1101(d). This was determined using the COMPLY program (V1.6) and the data from Table B. The COMPLY Code determined the facility was in compliance at Screening Level 1.

Liquid Effluent Releases

There were no discharges of liquid effluents to the environs from the WTR in 1999. All liquid waste was processed and discharged to a sanitary sewage in compliance with 10 CFR 20.2003.

5. A summarized result of the environmental survey performed outside the facility.

Environmental monitoring associated with the WTR decommissioning is in accordance with the programs and requirements of the SNM-770 license. Various environmental media and pathways are sampled under the SNM-770 License. Only media and pathways relevant to the WTR decommissioning are summarized in this report. Since there have been no discharges of liquids to the environs in 1999, the data presented is limited to the media and pathways relevant to airborne releases and direct radiation.

Direct radiation was measured with a series of TLDs deployed throughout the site and along the perimeter of the Central Operations Area. The TLDs contain aluminum oxide TL material with a dose reporting level of 0.1 mrem/quarter. Data collected from the TLDs near the WTR facility is summarized in Table E. Radiation levels recorded include those associated with activities under the SNM-770 license.

Two environmental air sampling stations are located approximately 800-ft and 1200-ft downwind of the WTR stack. A third station is located approximately 500-ft upwind of the stack. A measured volume of air is drawn through a particulate filter. The filters are collected and analyzed weekly for gross alpha and beta activity using a gas-flow proportional counter. The downwind air samplers are also downwind of several stacks associated with the SNM-770 license.

Surface soil samples are collected annually from four locations north, south, east, and west along the site boundary. The samples are collected to a depth of 15-cm. Gamma isotopic and strontium-90 analyses are performed on each sample.

Vegetation samples are collected annually at the same locations as the soil samples. Gamma isotopic and strontium-90 analyses are performed on each sample.

A summary of the SNM-770 environmental measurements relevant to the WTR Decommissioning Project is contained in Table E.

Table A

WTR Facilities Decommissioning Activities ALARA Summary

WTR Facility Area	Proposed Decommissioning Activity	Estimated Exposure (Person-rem)	ALARA Exposure Goal (Person-rem)	Actual Exposure by SRD (Person-rem) (6)	Status
Pre-Decommissioning Activities	Establish Radiological Controls.	0.050	0.040	0	Inactive - Complete.
Reactor Vessel, Internal Contents, and Biological Shield	Biological Shield sectioning and removal, one piece Reactor Vessel & internal component removal	18.91 (5)	14.227	0.448 (4)	Bioshield mobilization complete. Bioshield wire saw cutting in progress.
Sub Pile Room	Components removed, concrete decontamination, and partial or full demolition.	0.850	0.680	0.269 (1), (2)	Mobilization and component removal complete. Awaiting concrete decontamination and partial or full demolition.
Rabbit Pump Room	Components removed, concrete decontamination, and partial or full demolition.	0.080	0.064	0	No work to date.
Test Loop Cubicles/Dump Tank Pits	Components removed, concrete decontamination, and partial or full demolition.	0.410	0.328	0.177 (1), (2)	Components removed. Aggressive decontamination of concrete of concrete complete.
Primary Coolant Pipe Tunnel	Piping removed, concrete decontamination, and partial or full demolition.	1.880	1.504	0.028 (2)	Mobilization and de-watering complete. Preparing for Asbestos and piping removal.
Transfer Canal	Water drained, sediment removed, concrete decontaminated, and partial or full demolition.	7.930	6.344	0	No work to date.
Vapor Containment Building and Misc. systems and components	Miscellaneous systems and components decontaminated and/or removed, concrete and structure surfaces decontaminated, and Polar Crane decontaminated.	0.890	0.712	0.240 (3)	Electrical, misc. piping and component, and existing ventilation removal complete. Structural removal is on going. No work on the Vapor Containment Building decon to date.
Totals		29.874	23.899	1.162	

Notes:

(1) Dose attributed to the installation of temporary power and lighting, installation of new ventilation, routine tours, routine maintenance, Asbestos removal, installation of the Truck Lock door, inspection and repair of the Polar Crane, and routine HEPA unit/vacuum maintenance was divided equally between the major activities of Reactor Vessel/Bioshield, Sub Pile Room, Test Loop Cubicles/Dump Tank Pits, and Vapor Containment Building/misc. systems and components as they are preliminary or continuing integral parts of the major activities.

(2) Dose attributed to Health Physics support was divided equally between the five active major activities.

(3) Contains dose attributed to miscellaneous structural removal, existing electrical removal, miscellaneous piping and component removal, and existing ventilation removal in addition to (1) and (2) above.

(4) Contains dose attributed to the major activity and exploratory work on the Reactor Vessel in addition to (1) and (2) above.

(5) Estimate is for Option (3), which includes the removal of the Biological Shield, attachment of shielding plates to the Reactor Vessel, and down-ending and removal of the Reactor Vessel, with internal components intact, out of the Containment Building through the Truck Lock.

(6) Data through 12-31-99

Table B
1999 Solid Waste Shipments
For WTR

Shipment Id	CBS Shipment	Ship Date	Destination	Activity (mCi)	Gross Weight (pounds)	Gross Volume (cubic feet)	Waste Type
99006-RT	Yes	8/12/99	GTS	31.10	33625	2560	DAW,metal, pipes
99009-RT	Yes	10/4/99	GTS	1.15			Asbestos
99014-RT	Yes	10/20/99	GTS	43.40	35000	1360	DAW
99015-RT	Yes	10/20/99	GTS	58.20	28000	1360	Metals
99017-RT	Yes	11/2/99	GTS	56.90	30700	1360	Pipes, metals
99018-RT	Yes	11/2/99	GTS	249.00	36200	1360	Metals
99019-RT	Yes	11/4/99	GTS	92.40	28000	1360	Pipes, metals
99020-RT	Yes	11/8/99	GTS	27.30	28000	1360	Pipes, metals
99023-RT	Yes	11/9/99	GTS	17.10	28000	1360	Pipes, metals
99026-RT	Yes	11/11/99	GTS	17.40	24500	1360	Metal, asbestos
99029-RT	Yes	11/16/99	GTS	30.50	23000	1360	Compactable metal
99030-RT	Yes	12/9/99	GTS	20.50	32000	1360	Pipes, metals
99031-RT	Yes	12/9/99	GTS	54.80	39650	1525	Lead bricks
99032-RT	Yes	12/16/99	GTS	12.30	16500	1360	Metals
99033-RT	Yes	12/16/99	GTS	14.50	19600	1360	Lead bricks
99034-RT	Yes	12/17/99	GTS	17.60	23450	1360	Lead bricks
Totals				744.15	426225	21765	

Table C
Water Processing from TR-2 Sources

DATE	SOURCE	VOL (GAL)	INITIAL ACTIVITY GROSS α (μCi/ml)	INITIAL ACTIVITY GROSS β (μCi/ml)	DISCHARGE ACTIVITY GROSS α (μCi/ml)	DISCHARGE ACTIVITY GROSS β (μCi/ml)	ACTIVITY DISCHARGED μCi
11/5/99 11/8/99	WTR East Test Loop Dump Tank Pit	1,900	3.58E-8	3.13E-6	<1.8E-8	<4.4E-7	2.32 Beta 104.28 Tritium
11/5/99 11/8/99	WTR East Test Loop Dump Tank Pit	575	3.58E-8	3.13E-6	<1.8E-8	<5.0E-7	0.39 Beta 1.15 Tritium
12/6/99 12/7/99	Primary Coolant Tunnel	16,800	3.13E-9	4.3E-6	<1.8E-8	<5.0E-7	0
12/27/99 12/28/99	Primary Coolant Pipe & Tunnel	12,536	3.13E-9	4.3E-6	<1.8E-8	<5.0E-7	19.81 Beta 0 Tritium
	TOTAL	31,811					127.95

Table D
Summary of Releases from the WTR Ventilation System

Month (No. of Samples)	Average Gross Beta (Range) µCi/ml	Beta Activity Discharged µCi	Average Gross Alpha (Range) µCi/ml	Alpha Activity Discharged µCi
Jan-99 (0)	Note 1	Note 1	Note 1	Note 1
Feb-99 (0)	Note 1	Note 1	Note 1	Note 1
Mar-99 (0)	Note 1	Note 1	Note 1	Note 1
Apr-99 (0)	Note 1	Note 1	Note 1	Note 1
May-99 (0)	Note 1	Note 1	Note 1	Note 1
Jun-99 (3)	8.5E-15 (7.9E-15 – 1.0E-14)	0.09	7.1E-16 (6.2E-16 – 8.9E-16)	0.020
Jul-99 (3)	1.7E-14 (9.3e-15 – 2.5E-13)	0.11	9.3E-16 (3.9E-16 – 1.7E-14)	0.033
Aug-99 (4)	7.2E-15 (5.4E-15 – 9.4E-15)	0.12	9.1E-16 (1.9E-16 = 1.4E-15)	0.020
Sep-99 (4)	7.0E-15 (6.8E-15 – 7.7E-15)	0.12	3.7E-16 (1.1E-16 – 7.4E-16)	0.006
Oct-99 (5)	5.95E-15 (1.5E-15 – 1.1E-14)	0.13	9.7E-16 (3.2E-16 – 1.7E-15)	0.016
Nov-99 (4)	1.7E-14 (6.6E-15 – 4.1E-14)	0.29	1.9E-15 (2.2E-16 – 6.7E-15)	0.006
Dec-99 (6)	1.3E-14 (5.5E-15 – 2.0E-14)	0.22	1.15E-15 (3.2E-16 – 2.1E-15)	0.007
Annual (29)	1.1E-14 (1.5E-15 – 2.5E-13)	1.08	9.97E-16 (1.1E-16 – 1.7E-14)	0.108

Note 1: The WTR ventilation system was initially installed and made operational in June 1999.

TABLE E

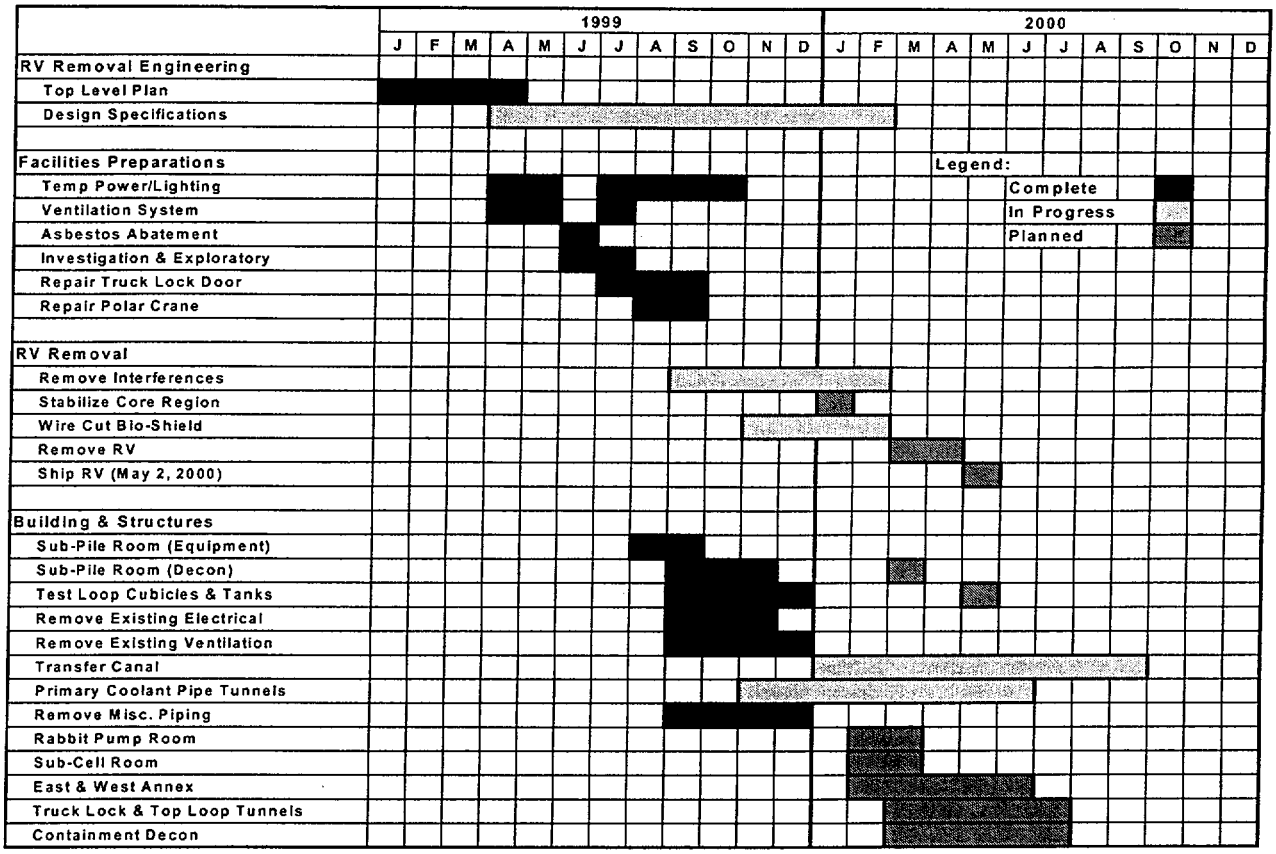
ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

Facility: Westinghouse Test Reactor
Docket No.: 50-22

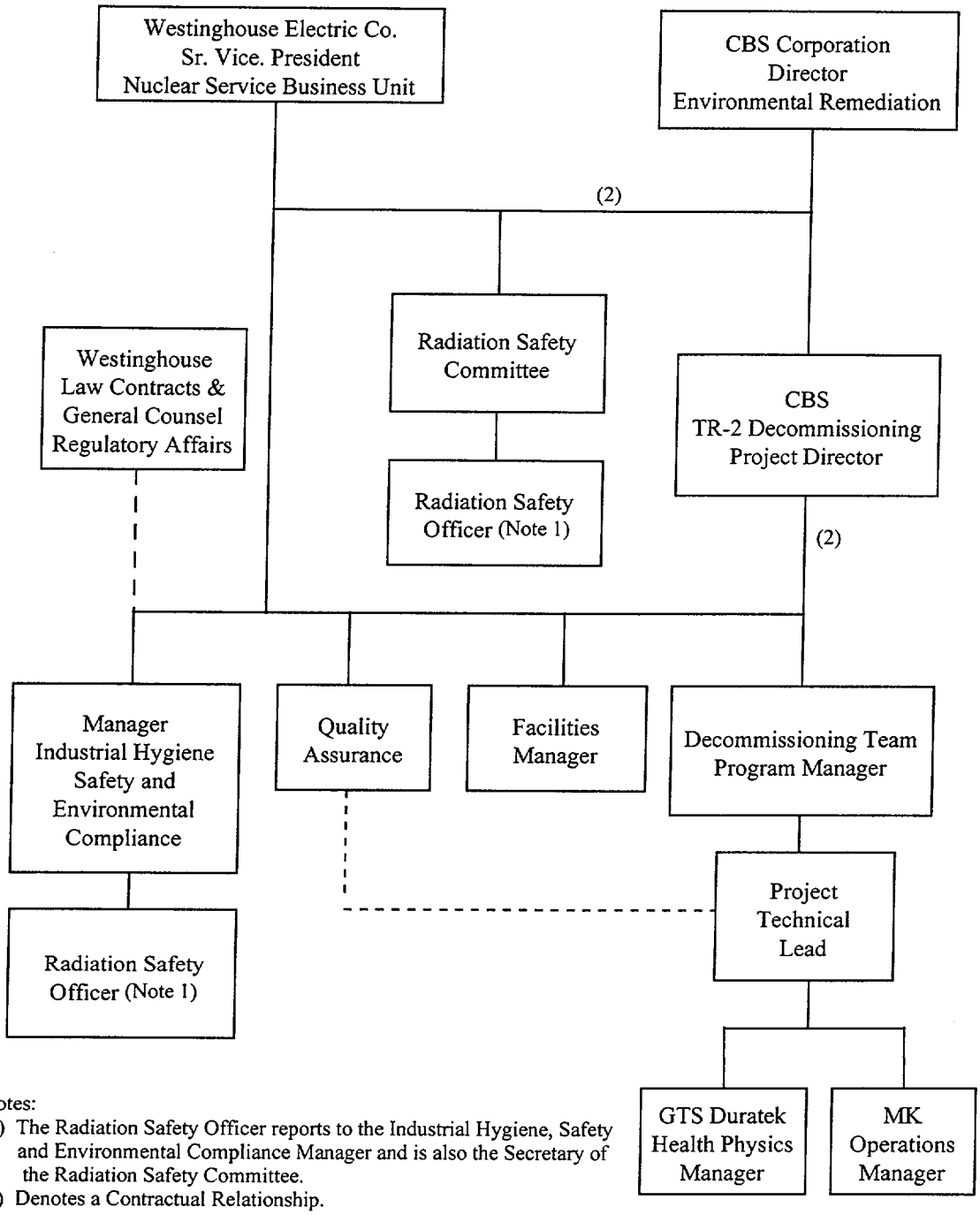
Location: Westmoreland County
Reporting Period: January 1 to December 31, 1999

Medium or pathway Sampled (Unit of Measurement)	Type and Number of Analyses Performed	Lower Limit Of Detection (LLD)	All Indicator Locations Mean (Range)	Control Location Result
Direct Radiation (mrem/year)	TLD (5)	0.1 mrem/quarter	32.2 ± 10.4 (19.4 – 47.2) **Location** / **mrem** 500 ft S of Rx: 19.4 90-ft W of Rx: 34.1 200-ft NW of Rx: 34.8 400-ft NE of Rx: 26.1 1150-ft E of Rx: 47.2	34.6 (5400-ft W of Rx)
Air Particulate (pCi/m³)	Gross Beta (99) Gross Alpha (99)	0.003 0.001	0.041 ± 0.026 (0.009 – 0.273) 0.002 ± 0.001 (0.001 – 0.009)	0.041 ± 0.002 (0.007 - 0.079) 0.002 ± 0.001 (0.000 -.004)
Surface Soil (pCi/gram-dry)	Gamma Spec (4) Cs-137 Co-60 Strontium-90	0.3 0.05 0.3	0.75 ± 0.19 (0.53 – 0.87) <LLD <LLD	0.09 ± 0.03 <LLD <LLD
Vegetation (pCi/gram-ash)	Gamma Spec (4) Cs-137 Co-60 Strontium-90	0.3 0.3 0.3	0.62 ± 0.7 (0.19 – 1.66) <LLD 3.5 ± 3.6 (0.31 – 6.73)	0.53 ± 0.25 <LLD 3.2 ± 0.42

WTR DECOMMISSIONING PROJECT
CURRENT SCHEDULE



WTR DECOMMISSIONING PROJECT ORGANIZATION



Notes:
(1) The Radiation Safety Officer reports to the Industrial Hygiene, Safety and Environmental Compliance Manager and is also the Secretary of the Radiation Safety Committee.
(2) Denotes a Contractual Relationship.