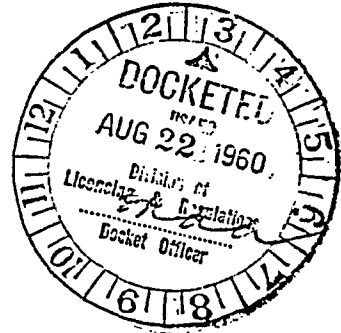


DOCKET NO. 50-39  
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CURTISS-WRIGHT CORPORATION  
RESEARCH DIVISION  
QUEHANNA, PENNSYLVANIA  
AMHERST 3-4711

August 17, 1960



U. S. Atomic Energy Commission  
Washington 25, D. C.

Attention: Mr. Lyall Johnson  
Chief, Licensing Branch  
Division of Licensing and Regulation

Gentlemen:

The Curtiss-Wright Corporation, Research Division, hereby respectfully requests the amendment of Research Reactor Facility License No. R-36 to permit shutdown of the facility and maintenance on a standby basis for a period of one year.

Enclosed is a description of the arrangements for storage of material during the shutdown and procedures to maintain surveillance over the building and its contents during this period. A guard patrol will check the facility every two hours and will complete the shutdown condition safety check list given in the enclosed procedures once daily.

It is Curtiss-Wright's intention to reopen the facility prior to the expiration of the one-year shutdown period for which this amendment is requested. However, prior to resumption of reactor operation, notice of intention to resume operations will be given to the Atomic Energy Commission, and detailed information concerning proposed operations will be submitted for approval at that time.

Very truly yours,

CURTISS-WRIGHT CORPORATION  
RESEARCH DIVISION

*[Signature]*  
John W. Dickey  
General Manager

NW/rt  
enclosures (3)

*D-191*

No classification review  
required. *11/28/90*

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CURTISS-WRIGHT CORPORATION  
RESEARCH DIVISION

REACTOR AND HOT LABORATORY FACILITY STANDBY SHUTDOWN PROCEDURES

I. Storage of Material

Irradiated fuel elements from the research reactor core will be stored in fuel element storage racks located in the large pool area. The stored fuel elements will form a plane array along one wall of the pool, occupying storage positions 52-64, 67-79, and 82-89, as shown in Figure 1. The fuel elements in these storage racks are spaced approximately 5 inches on center and are approximately 18 feet below the surface of the pool. The fuel elements will be secured in the storage racks by means of a hold-down device as shown in Figure 2.

The rod drives, guide assemblies, and magnets will be stored in a dry area; the magnets will be removed from the rod drive mechanisms and stored as low level radioactive material.

The ion chambers, fission counter, and their encapsulations will be removed from the pool and stored as low level radioactive material in a dry area to prevent damage due to the development of a leak in the encapsulation.

To assure that sufficient shielding is maintained to prevent a radiation hazard, the water level in the reactor pool will be maintained at a height of at least 17 feet above the top of the stored fuel elements. Water will be added by maintenance personnel familiar with the operation of the pool water make-up and filling system, when notified by the roving guard that water is needed.

II. Monitoring

The reactor bay will be monitored by a radiation monitor mounted on the reactor bridge above the stored fuel elements. Any condition which would raise the radiation level will be detected by the monitor, which will actuate an alarm in Building No. 7. This alarm will alert the Special Nuclear Materials Officer, who will take the following action:

1. Notify the roving guard not to enter Building No. 14 (the Reactor Building) until further notice.
2. Assemble an emergency crew consisting of a Health Physicist and Plant Maintenance personnel.
3. Proceed to Building No. 14 with the emergency crew and determine the cause of the alarm.

4. Take necessary action to correct the hazardous condition.
5. When the hazardous condition is corrected, notify the roving guard to resume the regular patrol of Building No. 14.

Any leak that might occur in fuel elements due to corrosion of fuel plate cladding would be detected by a radiation monitor located next to the recirculating water demineralizers. This detector is connected to the same alarm system previously described and would alert the Special Nuclear Materials Officer to take emergency action should a leak occur.

### III. Regular Inspections of Facility

During the standby shutdown, the facility will be visited regularly every two hours by a guard patrol to assure that the premises are not disturbed and that no hazardous conditions have developed. While on patrol, the guard will inspect the reactor pool, the storage facilities, and the monitoring devices, and each day will complete a check list showing essential information relative to the continued safety of the facility. A copy of the daily check list is included herein as Exhibit I.


Once each week the Health Physicist will make an independent check of all items checked daily by the guard and will make a detailed check on the operation of the monitor and alarm systems, the deionizer, the pool water pumping system, air sampler and monitor, and the integrity of locks securing stored radioactive materials. On one weekly inspection each month, the Health Physicist will calibrate the Jordan Remote Area Monitoring System. A copy of the check list for the weekly inspection is included herein as Exhibit II.

### IV. Resumption of Reactor Operation

Prior to the resumption of operation of the research reactor, a proposed procedure for reactivation of the facility will be filed with the United States Atomic Energy Commission. Reactor operation will not be resumed until the Commission has approved the proposed reactivation procedure.

In the event that the facility is not reactivated within one year, the Curtiss-Wright Corporation, Research Division, will submit further information to the United States Atomic Energy Commission concerning proposed further disposition of the facility.

CURTISS-WRIGHT CORPORATION  
RESEARCH DIVISION

  
John W. Dickey  
General Manager

August 17, 1960

EXHIBIT I

REACTOR DAILY CHECK LIST (GUARD)

	<u>Yes</u>	<u>No</u>	<u>Reading</u>
Reading on Jordan RAMS over pool			_____
Reading on Jordan RAMS in pump room			_____
Depth of Water			_____
Pressure reading at pump outlet (50 gpm)			_____
Pump operating normally (50 gpm)	___	___	
Water conductivity reading			_____
Building temperatures:			
Reactor Bay			_____
Electronics Shop			_____
Instruments Set-Up			_____
Office Area			_____
Health Physics Lab			_____
Hot Cell Operations Area			_____
Remote Control Engineering Lab			_____
Hot Cell Service			_____
Intermediate Level Radiochemistry			_____
Beam Room			_____
Pump Room			_____
Padlocks on Hold Down Rack Secure			
Rack #1	___	___	
Rack #2	___	___	
Rack #3	___	___	
Reading on Stack Continuous Air Sampler			_____
Reading on Service Area Continuous Air Sampler			_____
<u>Pressure drop across cell absolute filters</u>			
Filter #1			_____
Filter #2			_____
Filter #3			_____
Filter #4			_____
Filter #5			_____
Filter #6			_____
Auxiliary Filter			_____

Date \_\_\_\_\_

Signature \_\_\_\_\_

EXHIBIT II

REACTOR WEEKLY CHECK LIST (HEALTH PHYSICS)

Examine reports of guards and evaluate, check by making an independent tour.

Check operation of RAMS.

Calibrate RAMS monthly.

Check operation of building alarm.

Check condition of resins in recirculating deionizer.

Check operation of pump with plant maintenance.

Check water level and have plant maintenance refill pool when necessary and record amount added.

Check condition of padlocks on all cell doors.

Check zero and calibration of stack monitor.

Check operation of service area continuous air sampler.

Date \_\_\_\_\_

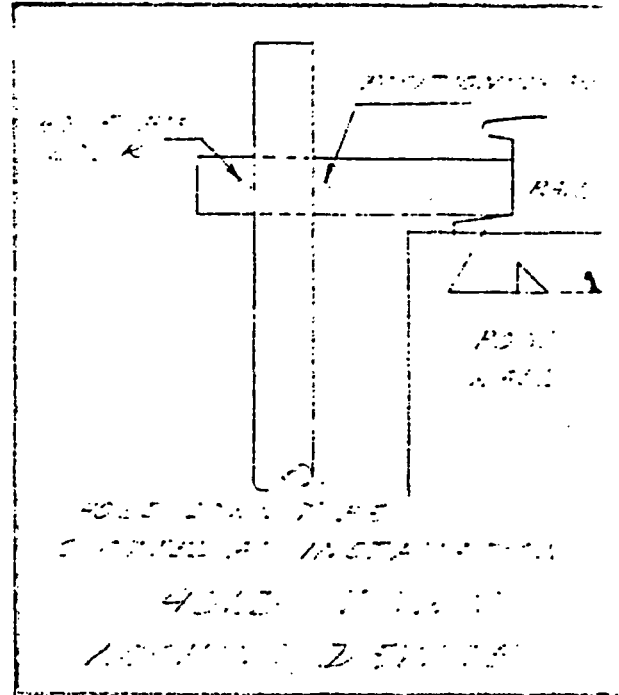
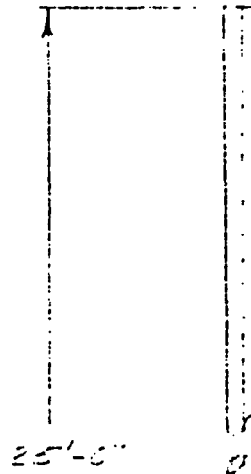
Signature \_\_\_\_\_

FULL SCALE

1/2" = 1'-0"

DOCKET NO. 50-39

Drawn w/eto 8-17-60

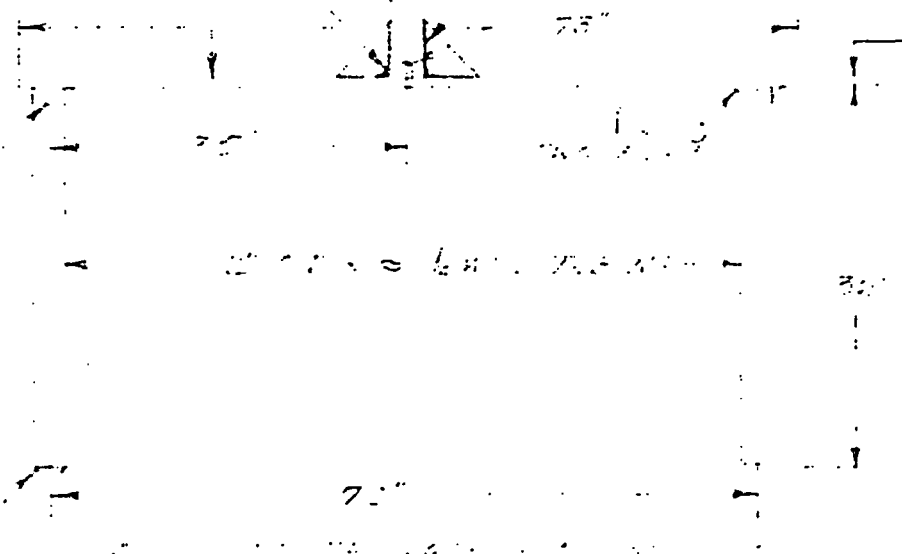


2" O.D. x 3/8" WALL

ALL DIMENSIONS

UNLESS OTHERWISE SPECIFIED

1/2" TYPICAL  
3" TO 5" WIDE



1/2" TYPICAL  
3" TO 5" WIDE

2" O.D. x 3/8" WALL

75"

30"

1/2" TYPICAL  
3" TO 5" WIDE

**THIS PAGE IS AN  
OVERSIZED DRAWING OR  
FIGURE,**

**THAT CAN BE VIEWED AT THE  
RECORD TITLED:  
"FUEL ELEMENT & REFLECTOR  
STORAGE - REACTOR BLDG #14"**

**WITHIN THIS PACKAGE**

**D-01**