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WANL-TME-247

From: Ground Support Engineering

Date: January 17, 1963

Subject: 5 and 5 Hot Cell Configuration for E-MAD Facility, Phase II

ASTRONUCLEAR LABORATORY

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- Reference:** (1) WANL-TME-246, Hot Cell Configuration for E-MAD Facility, Phase II
- (2) Aerojet-General Corporation - L741:0058, Review of Hot Cell Doors, dated December 7, 1962

I. Purpose

The purpose of this memorandum is to state the position of WANL concerning a 5 and 5 array of hot cells at the E-MAD Facility.

II. Background

In order to obtain the more desirable type of rear cell doors, i.e., lift type doors instead of plug doors, there has been discussion of a 5 and 5 configuration of hot cells. This would probably consist of two banks of hot cells, separated by a cell service area, with each bank containing two double and three single width cells.

Previously WANL has been directed to accept a 6 and 6 hot cell array as documented in reference (1). This cost saving hot cell rearrangement actually increased costs. It also caused the additional burden during operation of causing a flow of small samples, i.e., cubes of a maximum of three inches on a side, across the cell service area.

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III. Reasons Against a 5 and 5 Configuration

A. If WANL is Assigned Seven Cells

1. There will be a flow of larger components, i.e., fuel elements, tie rods, reflector segments, etc., across the cell service area.
2. There will have to be a re-evaluation of the tests to be performed and the location of the post-operative equipment in the hot cells.
3. There will be a loss in the flexibility of the hot cells because the flow of large components across the cell service area will preclude performing certain tests in particular cells.

B. If WANL is Assigned Six Cells or Less

1. There would have to be a major revamping and re-evaluation of the reactor component post-operative test program necessitated by the deviation from the original WANL minimum requirement of seven cells located at the E-MAD Facility.
2. There will be a requirement to ship various components including fuel elements to other hot cell facilities around the country due to the insufficient number of cells. This would cause an increase in paper work due to accountability, planning shipments, shipping cask movements, etc.
3. There will be a requirement for additional space to load reactor components, including fuel elements, into shipping casks for shipment to other hot cell facilities around the country.

4. If WANL is assigned six (6) cells there will be a loss in flexibility of the hot cells because of the flow of larger components across the cell service area will preclude performing certain tests in particular cells.

IV. Conclusions

It is evident from the evidence presented in section III that although the lift type rear doors for the hot cells are more desirable (reference 2), that more serious complications to the program arise if these are obtained by bartering away two hot cells.

WANL therefore states that according to the post-operative examinations of the reactor components, the 6 and 6 array of hot cells with plug type rear doors is more desirable than the 5 and 5 array of hot cells with lift type rear doors.



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