

November 19, 1998

Mr. W. R. McCollum, Jr.  
Vice President, Oconee Site  
Duke Energy Corporation  
P. O. Box 1439  
Seneca, SC 29679

SUBJECT: TECHNICAL SPECIFICATION 3.4 BASES REVISION - OCONEE NUCLEAR  
STATION, UNITS 1, 2, AND 3

Dear Mr. McCollum:

By letter dated October 6, 1998, you informed the staff of a change to the Oconee Nuclear Station, Units 1, 2, and 3, Technical Specifications (TS) that affects Bases Sections 3.3 and 3.5. Bases Section 3.3 was revised to incorporate changes to the Updated Final Safety Analysis Report sections that were listed as references. Bases Section 3.5 was revised to incorporate changes to the figures that contain the maximum allowable linear heat rate for the various fuel rods that are utilized at Oconee. Both changes occurred on September 15, 1998.

The purpose of this letter is to distribute the enclosed revised TS Bases pages to the appropriate TS manual holders.

Sincerely,  
ORIGINAL SIGNED BY:  
David E. LaBarge, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

Enclosure: Bases Change

cc w/encl: See next page

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**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

WASHINGTON, D.C. 20555-0001

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Vice President, Oconee Site  
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Sincerely,

A handwritten signature in black ink, appearing to read "D. LaBarge", written over a horizontal line.

David E. LaBarge, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

Enclosure: Bases Change

cc w/encl: See next page

Oconee Nuclear Station

cc:

Mr. Paul R. Newton  
Legal Department (PBO5E)  
Duke Energy Corporation  
422 South Church Street  
Charlotte, North Carolina 28201-1006

J. Michael McGarry, III, Esquire  
Winston and Strawn  
1400 L Street, NW.  
Washington, DC 20005

Mr. Rick N. Edwards  
Framatome Technologies  
Suite 525  
1700 Rockville Pike  
Rockville, Maryland 20852-1631

Manager, LIS  
NUS Corporation  
2650 McCormick Drive, 3rd Floor  
Clearwater, Florida 34619-1035

Senior Resident Inspector  
U. S. Nuclear Regulatory  
Commission  
7812B Rochester Highway  
Seneca, South Carolina 29672

Regional Administrator, Region II  
U. S. Nuclear Regulatory Commission  
Atlanta Federal Center  
61 Forsyth Street, S.W., Suite 23T85  
Atlanta, Georgia 30303

Virgil R. Autry, Director  
Division of Radioactive Waste Management  
Bureau of Land and Waste Management  
Department of Health and Environmental  
Control  
2600 Bull Street  
Columbia, South Carolina 29201-1708

County Supervisor of Oconee County  
Walhalla, South Carolina 29621

Mr. J. E. Burchfield  
Compliance Manager  
Duke Energy Corporation  
Oconee Nuclear Site  
P. O. Box 1439  
Seneca, South Carolina 29679

Ms. Karen E. Long  
Assistant Attorney General  
North Carolina Department of  
Justice  
P. O. Box 629  
Raleigh, North Carolina 27602

L. A. Keller  
Manager - Nuclear Regulatory  
Licensing  
Duke Energy Corporation  
526 South Church Street  
Charlotte, North Carolina 28201-1006

Mr. Richard M. Fry, Director  
Division of Radiation Protection  
North Carolina Department of  
Environment, Health, and  
Natural Resources  
3825 Barrett Drive  
Raleigh, North Carolina 27609-7721

Mr. Steven P. Shaver  
Senior Sales Engineer  
Westinghouse Electric Company  
5929 Carnegie Blvd.  
Suite 500  
Charlotte, North Carolina 28209

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Valve LPSW-108 is the LPSW isolation valve on the discharge side of each Unit's RBCUs. This valve is required to be locked open in order to assure the LPSW flowpath for the RBCUs is available.

Three low pressure service water pumps serve Oconee Units 1 and 2 and two low pressure service water pumps serve Oconee Unit 3. There is a manual cross-connection on the supply headers for Unit 1, 2, and 3. One low pressure service water pump per unit is required for normal operation.

The Units 1 and 2 LPSW system requires two pumps to meet the single failure criterion provided that one of the Units has been defueled and the following LPSW system loads on the defueled Unit are isolated: RBCUs, Component Cooling, main turbine oil tank, RC pumps, and LPI coolers. In this configuration, if two of the three LPSW pumps are inoperable, 72 hours are permitted by TS 3.3.7.b to restore two of the three LPSW pumps to operable status. At all other times when the RCS of Unit 1 or 2 is  $\geq 350$  psig or  $\geq 250^\circ\text{F}$ , all three LPSW pumps are required to meet the single failure criterion. When all three LPSW pumps are required to be operable and one of the three pumps is inoperable, 72 hours are permitted by TS 3.3.7.b to restore the pump to operable status.

The operability of redundant equipment(s) is determined based on the results of inservice inspection and testing as required by Technical Specification 4.5 and ASME Section XI.

#### REFERENCES

- (1) UFSAR, Section 15.14
- (2) Duke Power Company to NRC letter, July 14, 1978, "Proposed Modifications of High Pressure Injection System".
- (3) UFSAR, Section 9.3.3.2

Bases

Operation at power with an inoperable control rod is permitted within the limits provided. These limits assure that an acceptable power distribution is maintained and that the potential effects of rod misalignment on associated accident analyses are minimized. For a rod declared inoperable due to misalignment, the rod with the greatest misalignment shall be evaluated first. Additionally, the position of the rod declared inoperable due to misalignment shall not be included in computing the average position of the group for determining the operability of rods with lesser misalignments. When a control rod is declared inoperable, boration may be initiated to achieve the existence of 1%  $\Delta k/k$  hot shutdown margin.

The power-imbalance envelope obtained in accordance with the approved methodology is based on LOCA analyses which have defined the maximum linear heat rate (see Figure 3.5.2-16a, b, c, and d) such that the maximum clad temperature will not exceed the Final Acceptance Criteria. Corrective measures will be taken immediately should the indicated quadrant tilt, rod position, or imbalance be outside their specified boundary. Operation in a situation that would cause the Final Acceptance Criteria to be approached should a LOCA occur is highly improbable because all of the power distribution parameters (quadrant tilt, rod position, and imbalance) must be at their limits while simultaneously all other engineering and uncertainty factors are also at their limits.\*\* Conservatism is introduced by application of:

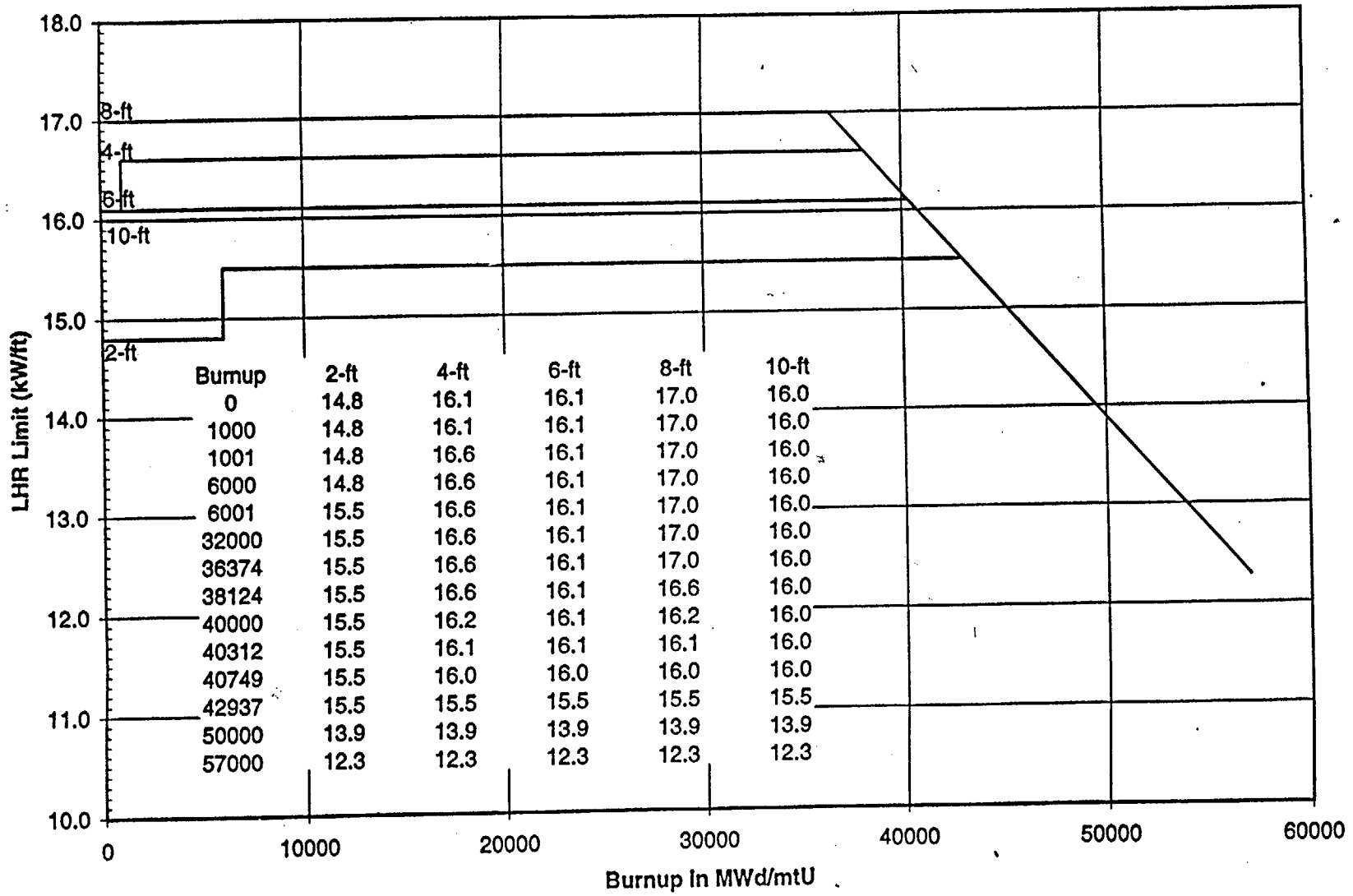
- a. Nuclear uncertainty factors
- b. Thermal calibration
- c. Hot rod manufacturing tolerance factors

The 25%  $\pm$  5% overlap between successive control rod groups is allowed since the worth of a rod is lower at the upper and lower part of the stroke. Control rods are arranged in groups or banks defined as follows:

<u>Group</u>	<u>Function</u>
1	Safety
2	Safety
3	Safety
4	Safety
5	Regulating
6	Regulating
7	Xenon transient override
8	APSR (axial power shaping rod)

\*\* Actual operating limits depend on whether or not incore or excore detectors are used and their respective instrument calibration errors. The method used to define the operating limits is defined in plant operating procedures.

### LOCA LHR Limits for Mk-B8 Fuel (applicable only for O3C17)

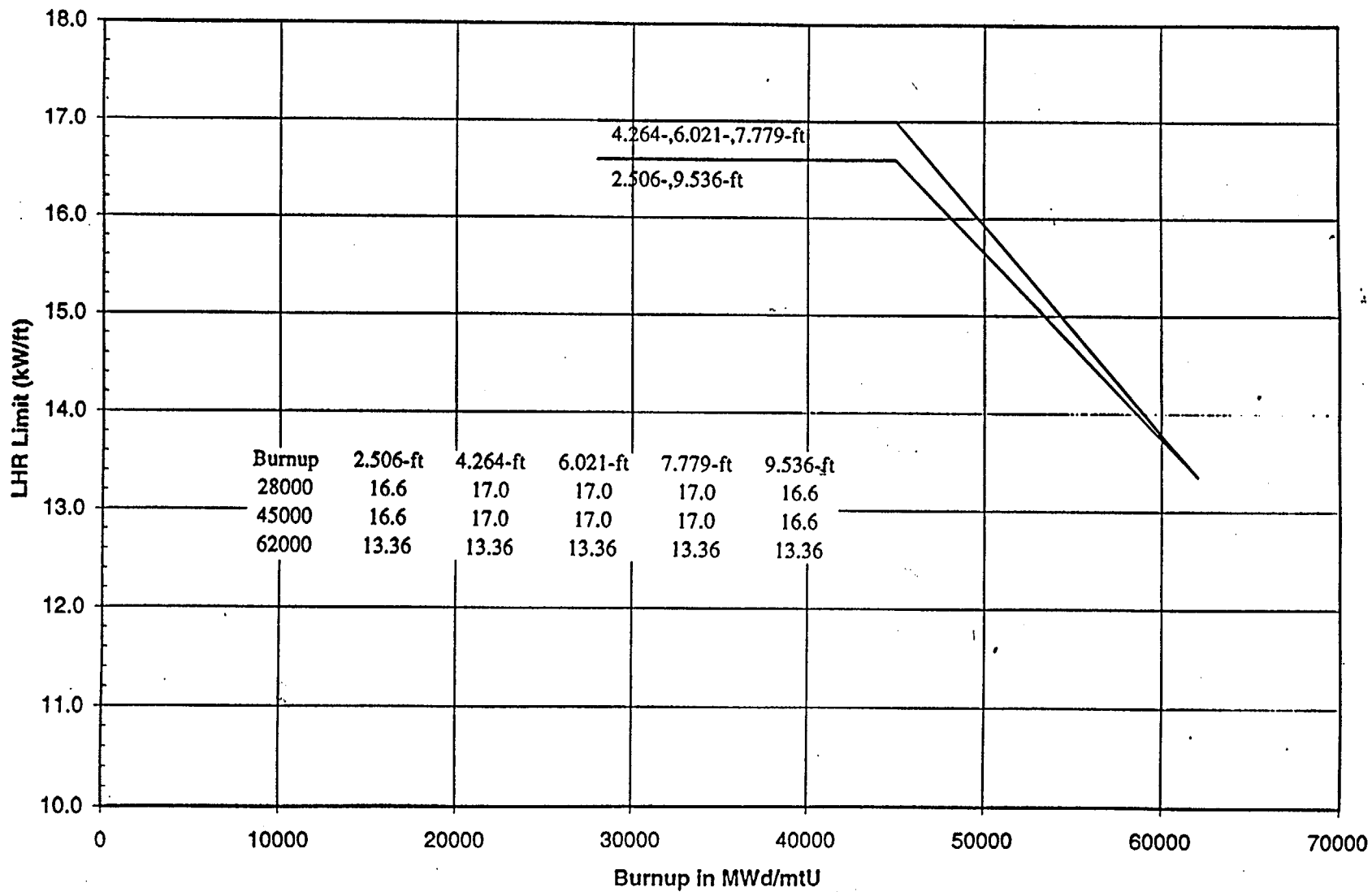


3.5-30

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Figure 3.5.2-16a

### LOCA LHR Limits for Mk-B9 Fuel



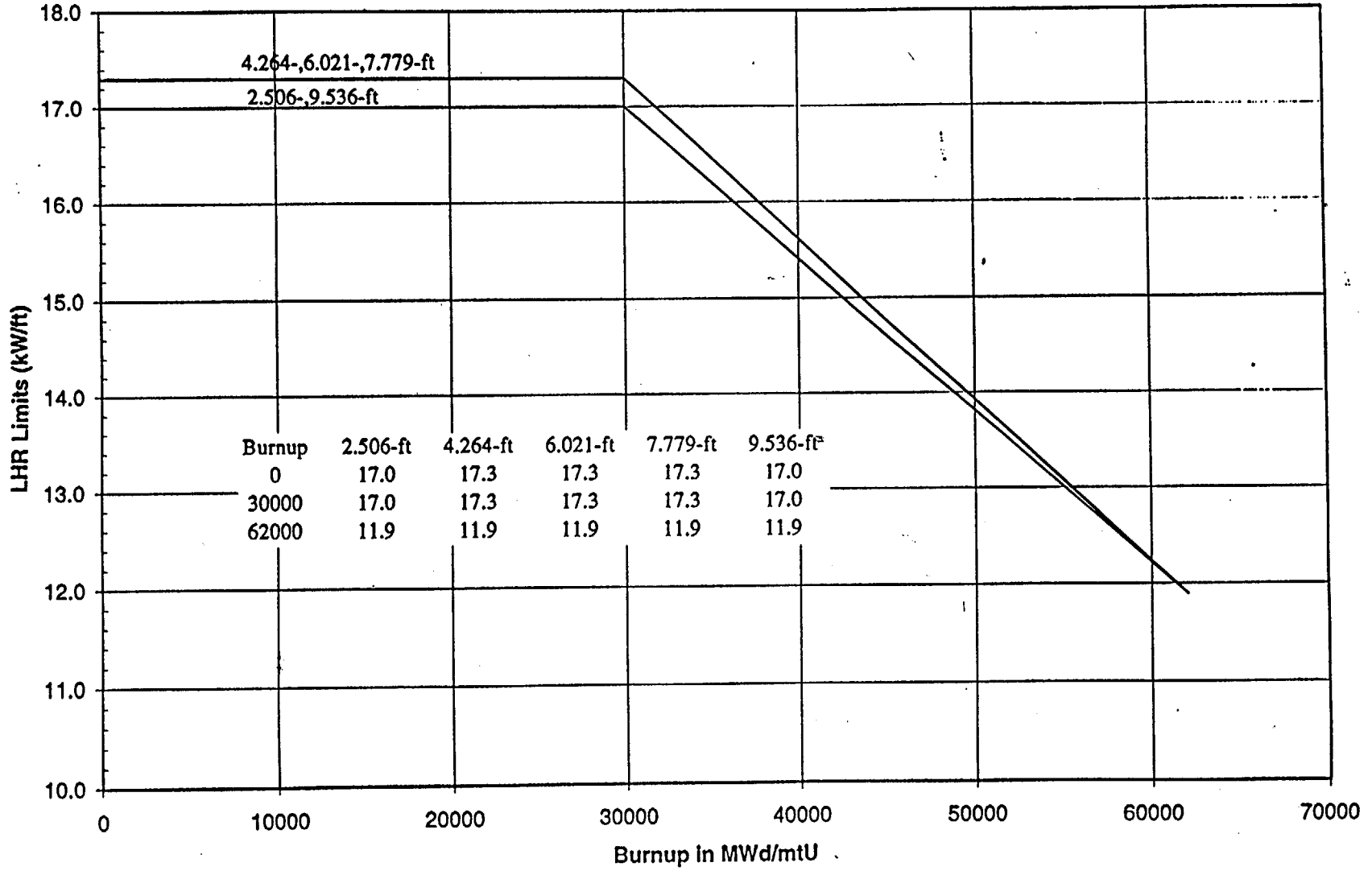
3.5-30a

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Figure 3.5.2-16b



### LOCA LHR Limits for Mk-B10 Fuel

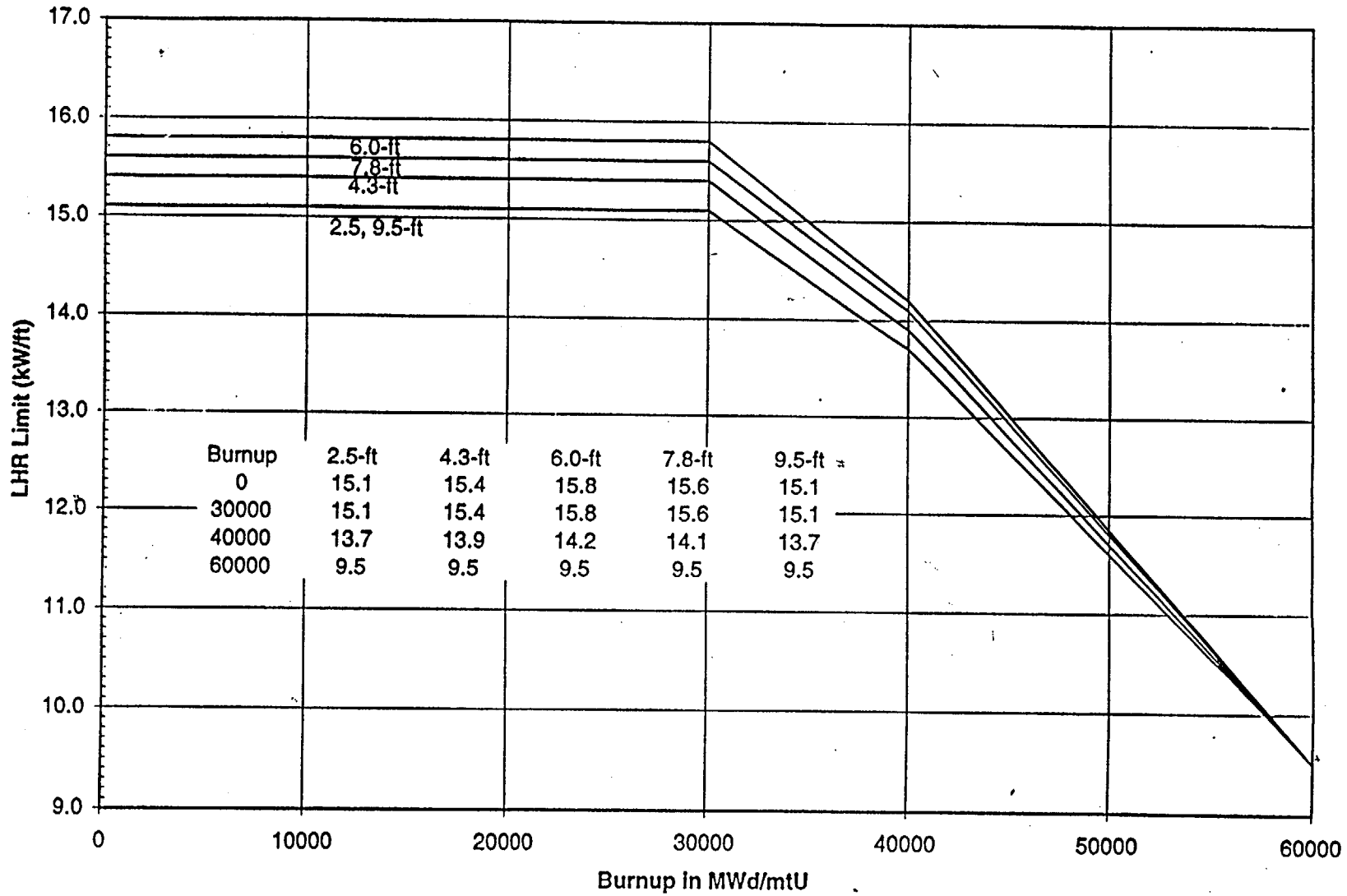


3.5-30b

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Figure 3.5.2-16c

### LOCA LHR Limits for Mk-11 LTA Fuel



3.5-30c

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Figure 3.5.2-16d