REFUELING OPERATIONS

SPENT FUEL POOL FUEL ASSEMBLY STORAGE

LIMITING CONDITION FOR OPERATION

3.9.13 Fuel assemblies ~~stored in the~~ spent fuel pool shall be placed in the spent fuel storage racks ~~according to~~ in accordance with the criteria shown in Figure 3.9-1.

1

APPLICABILITY: Whenever fuel assemblies are in the spent fuel pool.

ACTION:

With the requirements of the above specification not satisfied, suspend all other fuel movement within the spent fuel pool and move the non-complying fuel assemblies to allowable locations in the spent fuel pool in accordance with Figure 3.9-1. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

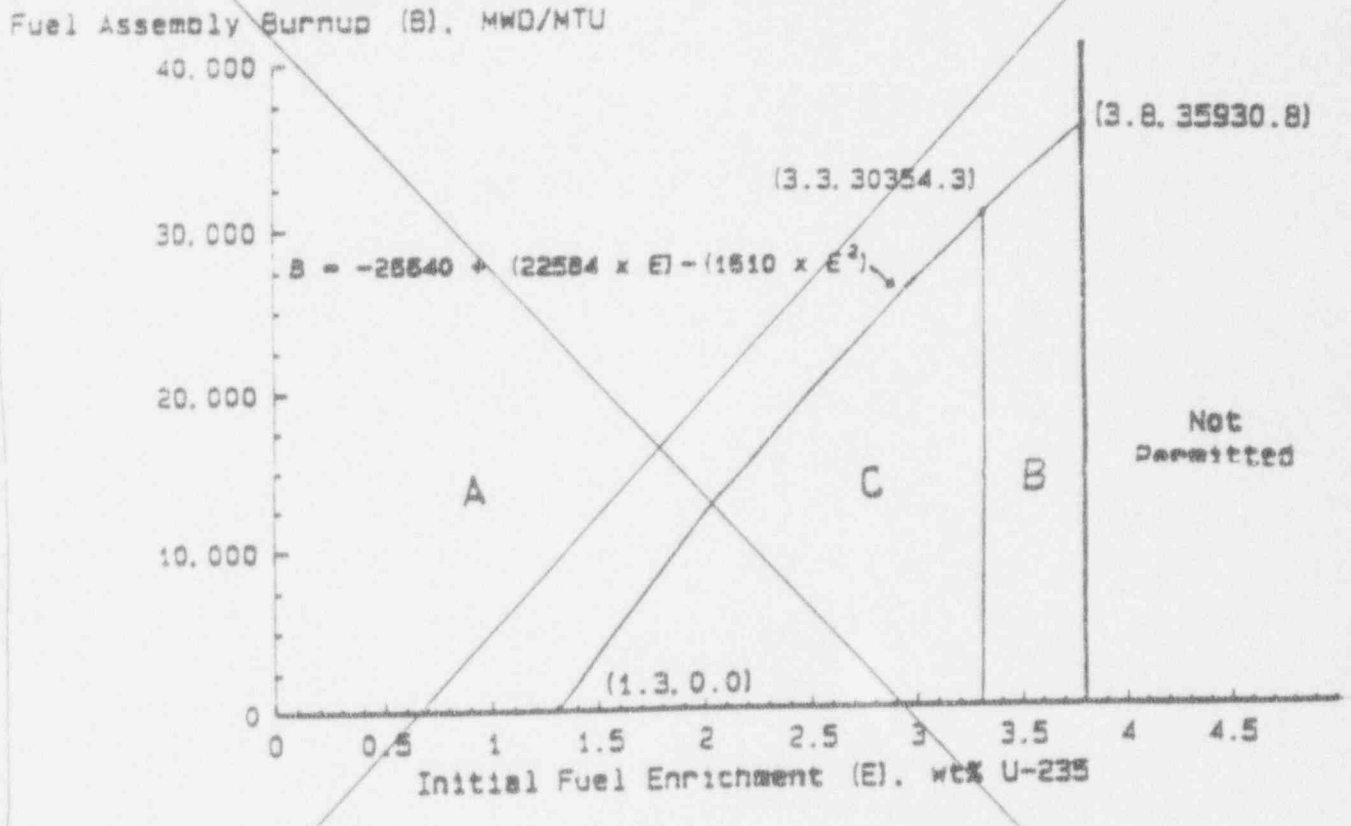
SURVEILLANCE REQUIREMENTS

~~4.9.13.1 The burnup of each fuel assembly to be stored in the spent fuel pool shall be ascertained through analysis of its burnup history prior to storage in the spent fuel pool. A complete record of each analysis shall be maintained as long as that fuel assembly is retained onsite.~~

~~4.9.13.2 After each fuel assembly move in the spent fuel pool, the position of the fuel assembly that was moved shall be checked and independently verified to be in accordance with the criteria in Figure 3.9-1.~~

4.9.13.1 Prior to storing the fuel assembly in the spent fuel pool, verify by administrative means that the initial enrichment and burnup of the fuel assembly is in accordance with Figure 3.9-1.

Figure 3.9-1
Burnup vs. Enrichment Curve for Davis-Besse Spent Fuel Storage Racks



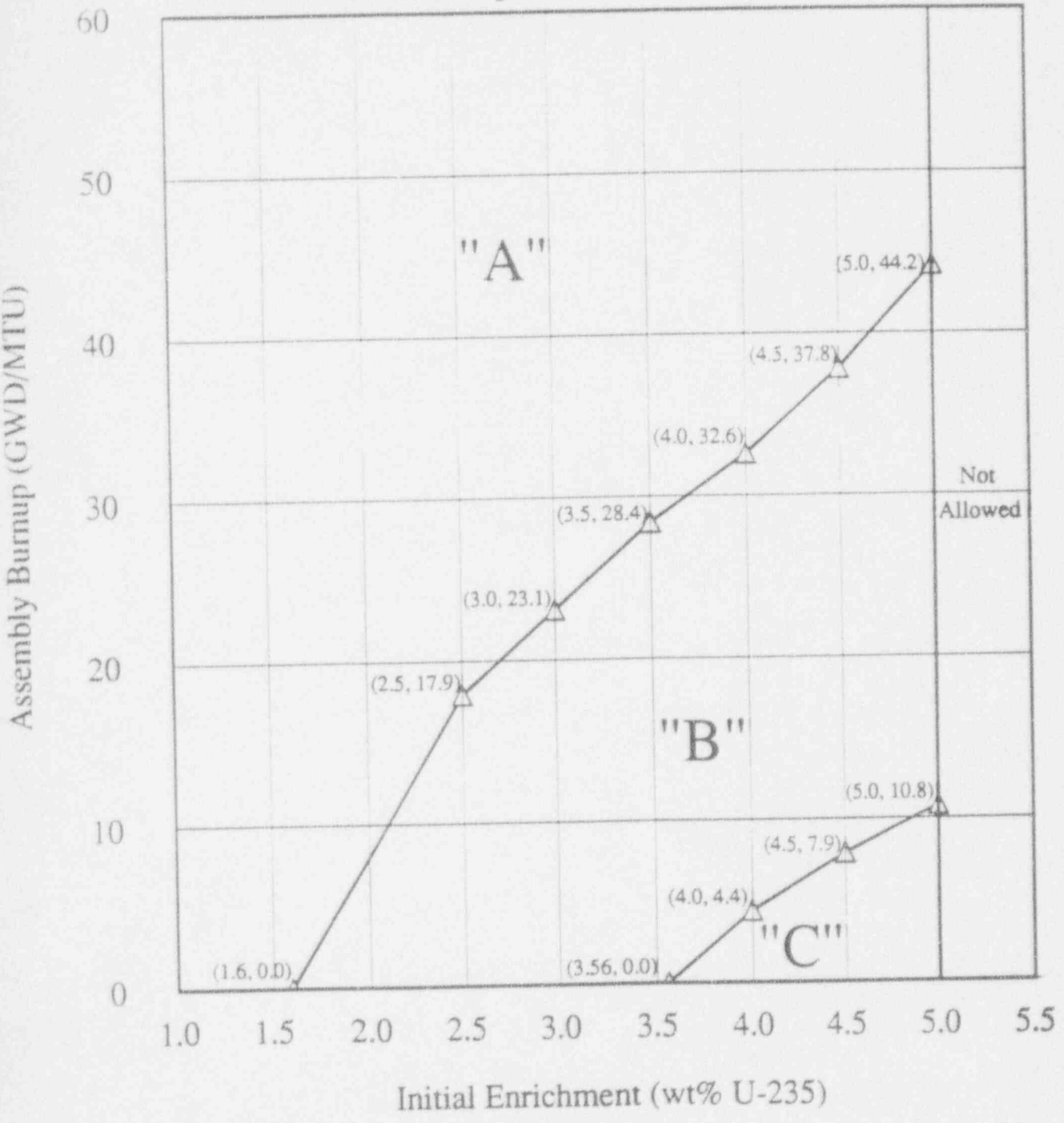
Category "A" Fuel - May be located anywhere within the storage racks

Category "B" Fuel - Shall only be located adjacent to Category "A" Fuel or water holes within the storage racks

Category "C" Fuel - Shall not be located adjacent to Category "B" Fuel

Replace with new Figure 3.9-1 (Attached)

Figure 3.9-1
Burnup vs. Enrichment Curves For Davis-Besse Spent Fuel Storage Racks



Category "A": May be placed in any rack location

Category "B": Must not be placed directly adjacent to Category "C" assemblies

Category "C": May only be placed directly adjacent to Category "A" assemblies or non-fuel locations

BASES

3/4.9.12 STORAGE POOL VENTILATION

The requirements on the emergency ventilation system servicing the storage pool area to be operating or OPERABLE ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses.

3/4.9.13 SPENT FUEL POOL FUEL ASSEMBLY STORAGE

The restrictions on the placement of fuel assemblies within the spent fuel pool, as dictated by Figure 3.9-1, ensure that the k-effective of the spent fuel pool will always remain less than 0.95 assuming the pool to be flooded with non-borated water. The restrictions delineated in Figure 3.9-1 and the action statement are consistent with the criticality safety analysis performed for the spent fuel pool.

VOLUME

5.4.2 The total water and steam volume of the reactor coolant system is 12,110 ± 200 cubic feet at a nominal T_{avg} of 525°F.

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-1.

5.6 FUEL STORAGE

c. Fuel assemblies stored in the spent fuel pool in accordance with Technical Specification 3.9.13.

CRITICALITY

5.6.1.1 The spent fuel storage racks are designed and shall be maintained with:

a. A K_{eff} equivalent to less than or equal to 0.95 when flooded with unborated water, which includes a conservative allowance of 1% delta k/k for calculation uncertainty.

b. A rectangular array of stainless steel cells spaced 12 31/32 inches on centers in one direction and 13 3/16 inches on centers in the other direction. Fuel assemblies stored in the spent fuel pool shall be placed in a stainless steel cell of 0.125 inches nominal thickness or in a failed fuel container.

5.6.1.2 The new fuel storage racks are designed and shall be maintained with:

a. A K_{eff} equivalent to less than or equal to 0.95 when flooded with unborated water, which includes a conservative allowance of 1% delta k/k for uncertainties as described in Section 9.1 of the USAR.

b. A K_{eff} equivalent to less than or equal to 0.98 when immersed in a hydrogenous "mist" of such a density that provides optimum moderation (i.e., highest value of K_{eff}), which includes a conservative allowance of 1% delta k/k for uncertainties as described in Section 9.1 of the USAR.

c. A nominal 21 inch center-to-center distance between fuel assemblies placed in the storage racks.

DRAINAGE

5.6.2 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below 9 feet above the top of the fuel storage racks.

d. Fuel assemblies having a maximum initial enrichment of 5.0 weight percent uranium-235.

ENVIRONMENTAL ASSESSMENT
LICENSE AMENDMENT REQUEST (LAR) 90-0042

Identification of Proposed Action

This proposed action involves the Davis-Besse Nuclear Power Station (DBNPS), Unit Number 1, Operating License Number NPF-3, Appendix A, Technical Specifications (TS). A license amendment is proposed to revise TS 3.9.13, Refueling Operations - Spent Fuel Pool Fuel Assembly Storage, associated TS Figure 3.9-1, Burnup versus Enrichment Curve for Davis-Besse Spent Fuel Storage Racks, and TS 5.6, Design Features - Fuel Storage. The proposed amendment would revise the provisions in the TS to allow storage of new and spent fuel assemblies with an initial nominal enrichment of uranium-235 no greater than 5.0 weight percent (wt%). The existing TS Figure 3.9-1 limits the initial enrichment of fuel that can be stored in the spent fuel pool to 3.8 wt%. The existing TS do not directly restrict the initial enrichment of new fuel that can be stored in the new fuel storage racks.

The use of higher enrichment fuel in the reactor is not part of this proposed action.

The Need for the Proposed Action

The proposed changes to the TS are required in order to provide the capability to store fuel with a higher initial enrichment of uranium-235 for future use in the reactor, and to store the spent fuel when it is discharged from the reactor. This capability will allow a reduction in the number of new fuel assemblies that are loaded into the reactor during each reload. Corresponding to this reduction in reload batch size is an increase in the fuel assembly average discharge burnup.

Environmental Impacts of the Proposed Action

The environmental impacts of the uranium fuel cycle associated with higher enrichments and extended fuel burnups have been generically assessed by the NRC, as published in the Federal Register, 53 FR 6040 dated February 29, 1988, "Extended Burnup Fuel Use in Commercial LWRs; Environmental Assessment and Finding of No Significant Impact," and 53 FR 30355 dated August 11, 1988, "NRC Assessment of the Environmental Effects of Transportation Resulting from Extended Fuel Enrichment and Irradiation". In summary, the NRC Staff concluded that the environmental impacts summarized in Table S-3 of 10 CFR 51.51 and in Table S-4 of 10 CFR 51.52 for a burnup level of 33 GWD/MTU are conservative and bound the corresponding impacts for burnup levels up to 60 GWD/MTU and uranium-235 enrichments up to 5 percent by weight, and that the transportation impacts of extended irradiation and increased fuel enrichment are bounded by the impacts reported in Table S-4 of 10 CFR 51.

With regard to potential non-radiological impacts, the proposed amendment involves no increase in the amounts or change in types of any non-radiological effluents that may be released offsite, and has no other environmental impact.

Alternatives to the Proposed Action

Since it has been concluded that the environmental effects of the proposed action are not significant, any alternatives will have only similar or greater environmental impacts.

The principle alternative would be not to amend the TS. This would not reduce the environmental impacts of plant operation and would result in reduced operational flexibility.

Alternative Use of Resources

This action does not involve the use of resources not previously considered in the "Final Environmental Statement Related to the Operation of the Davis-Besse Nuclear Power Station, Unit Number 1" (NUREG 75/097), dated October 1975.

Finding of No Significant Impact

Based upon the foregoing environmental assessment, Toledo Edison concludes that there are no significant adverse radiological or non-radiological impacts associated with the proposed Technical Specification changes.

Accordingly, Toledo Edison finds that the proposed license amendment, if approved by the NRC, will have no significant impact on the environment, and that no Environmental Impact Statement is required.