

**Table 2.1-4**  
**BURNUP AND COOLING TIME FUEL QUALIFICATION FOR MPC-32M**

<b>Cell Decay Heat Load Limit (kW)</b>	<b>Polynomial Coefficients, see Paragraph 2.II.1.5.2</b>			
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
$\leq 0.83$	6.57083E-14	-4.02593E-09	1.47107E-04	8.01647E-01
$0.83 < \text{decay heat} \leq 1.25$	4.11020E-14	-4.62813E-09	2.17444E-04	-5.55545E-01
$1.25 < \text{decay heat} \leq 1.46$	1.21147E-14	-1.08013E-09	8.66361E-05	4.04455E-01
$1.46 < \text{decay heat} \leq 3.26$	3.76103E-16	4.83486E-11	1.74805E-05	6.53455E-01

The burnup and cooling time for every fuel loaded into the MPC-32M must satisfy the following equation:

$$Ct = A \cdot Bu^3 + B \cdot Bu^2 + C \cdot Bu + D$$

where,

$Ct$  = Minimum cooling time (years),

$Bu$  = Assembly-average burnup (MWd/mtU),

$A, B, C, D$  = Polynomial coefficients listed in Table 2.1-4

**Notes:**

- 1) Decay heat per fuel assembly is presented
- 2) A decay heat value that is equal to or greater than the appropriate decay heat load limit

<b>Table 3-1</b> <b>List of ASME Code Alternatives for HI-STORM Multi-Purpose Canisters (MPCs)</b>			
MPC lift lugs	NB-1130	<p>NB-1132.2(d) requires that the first connecting weld of a non-pressure retaining structural attachment to a component shall be considered part of the component unless the weld is more than 2t from the pressure retaining portion of the component, where t is the nominal thickness of the pressure retaining material.</p> <p>NB-1132.2(e) requires that the first connecting weld of a welded nonstructural attachment to a component shall conform to NB-4430 if the connecting weld is within 2t from the pressure retaining portion of the component.</p>	The lugs that are used exclusively for lifting an empty MPC are welded to the inside of the pressure-retaining MPC shell, but are not designed in accordance with Subsection NB. The lug-to-Enclosure Vessel Weld is required to meet the stress limits of Reg. Guide 3.61 in lieu of Subsection NB of the Code.
MPC Enclosure Vessel	NB-2000	Requires materials to be supplied by ASME-approved material supplier.	Materials will be supplied by Holtec approved suppliers with Certified Material Test Reports (CMTRs) in accordance with NB-2000 requirements.
MPC Enclosure Vessel	NB-2121	Provides permitted material specification for pressure-retaining material, which must conform to Section II, Part D, Tables 2A and 2B.	Certain duplex stainless steels are not included in Section II, Part D, Tables 2A and 2B. UNS S31803 duplex stainless-steel alloy is evaluated in the HI-STORM FW FSAR and meet the required design criteria for use in the HI-STORM 100 system per ASME Code Case N-635-1. Appendix 1.A provides the required property data for the necessary safety analysis.
MPC Enclosure Vessel	NB-3100 NF-3100	Provides requirements for determining design loading conditions, such as pressure, temperature, and mechanical loads.	<b>These requirements are not applicable. The HI-STORM FSAR, serving as the Design Specification, establishes the service conditions and load combinations for the storage system.</b>
MPC Enclosure Vessel	NB-4120	NB-4121.2 and NF-4121.2 provide requirements for repetition of tensile or impact tests for material subjected to heat treatment during fabrication or installation.	In-shop operations of short duration that apply heat to a component, such as plasma cutting of plate stock, welding, machining, and coating are not, unless explicitly stated by the Code, defined as heat treatment operations.