Enclosure 3 to E-60447

Proposed Certificate of Compliance No. 1004 Amendment 18, Revision 0 Markup

CERTIFICATE OF COMPLIANCE FOR SPENT FUEL STORAGE CASKS

The U.S. Nuclear Regulatory Commission is issuing this certificate of compliance pursuant to Title 10 of the *Code of Federal Regulations*, Part 72, "Licensing Requirements for Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste" (10 CFR Part 72). This certificate is issued in accordance with 10 CFR 72.238, certifying that the storage design and contents described below meet the applicable safety standards set forth in 10 CFR Part 72, Subpart L, and on the basis of the Final Safety Analysis Report (FSAR) of the cask design. This certificate is conditional upon fulfilling the requirements of 10 CFR Part 72, as applicable, and the conditions specified below.

Certificate No.	Effective Date (Certificate)	Expiration Date	Docket No.	Amendment No.	Amendment Effective Date	Package Identification No.
1004	1/23/95	1/23/2015	72-1004	*18*	*TBD*	USA/72-1004
	Renewed Effective Date	Renewed Expiration Date		Revision No	Revision Effective Date	
	12/11/17	1/23/2055		0	NA	

Issued To: (Name/Address)

TN Americas LLC
7160 Riverwood Drive, Suite 200
Columbia, MD 21046

Safety Analysis Report Title

TN Americas LLC, "Final Safety Analysis Report for the Standardized NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel"

CONDITIONS

This certificate is conditioned upon fulfilling the requirements of 10 CFR Part 72, as applicable, the attached Appendix A (Inspections, Tests and Evaluations), Appendix B (Technical Specifications), Appendix C (ASME Code Alternatives), and the conditions specified below:

I. TECHNOLOGY

The Standardized NUHOMS® System is certified as described in the final safety analysis report (FSAR) and in the NRC's safety evaluation report (SER). The Standardized NUHOMS® System is a horizontal, canister-based, dry spent fuel storage system. The Standardized NUHOMS® System is comprised of a dry shielded canister (DSC), a horizontal storage module (HSM), and a transfer cask (TC). The welded metal DSC provides confinement and criticality control for the storage and transfer of spent fuel. The concrete HSM provides radiation shielding while allowing for cooling of the DSC and fuel by natural convection during storage. The TC is used to facilitate the loading of spent fuel into the DSC at the reactor spent fuel handling building, preparation of the DSC for storage operations, and subsequent transfer of the DSC into the HSM (and out of the HSM for eventual transport and disposal offsite or for other purposes). The TC provides the necessary radiation shielding during these operations.

The following DSC models are authorized for use in the Standardized NUHOMS® System: 24P (Standard and Long Cavity), 24PHB (Standard and Long Cavity), 24PTH (24PTH-S, 24PTH-L, 24PTH-S-LC), 32PT (32PT-S100, 32PT-S125, 32PT-L100, 32PT-L125), 32PTH1 (32PTH1-S, 32PTH1-M, 32PTH1-L), 37PTH (37PTH-S, 37PTH-M), 52B, 61BT, 61BTH Type 1; 61BTH Type 2, 69BTH.

The two digits refer to the number of fuel assemblies stored in the DSC, the character P for pressurized water reactor (PWR) or B for boiling water reactor (BWR) is to designate the type of fuel stored, and T is to designate that the DSC is intended for transportation in a 10 CFR Part 71 approved package. The characters H or HB generally refer to designs qualified for fuel with burnup greater than 45 GWd/MTU, although certain designs, such as the 32PT, are now also qualified for fuel with burnup greater than 45 GWd/MTU.

Variations of the DSC models have -S, -M or -L at the end to indicate the relative length of the DSCs (-S for short, -M for medium, and - L or -LC for long cavity configurations). Information concerning the fuel types, dose rate limits, or other TS applies to all variants if they are not explicitly mentioned in the CoC, ITE, or TS.

The following HSM models are authorized for use: Standardized HSM, HSM-H, and the HSM-H high seismic option, the HSM-HS.

The following TC models are authorized for use in the Standardized NUHOMS® System: Standardized TC, OS197, OS197H, OS197L, OS200. Additional TCs include the OS197FC and the OS197FC-B variants of the OS197, the OS197HFC and the OS197HFC-B variants of the OS197H, and the OS200FC variant of the OS200, as described in the TS.

With the exception of the TC, fuel transfer and auxiliary equipment necessary for ISFSI operations are not included as part of the Standardized NUHOMS® System referenced in this certificate of compliance (CoC). Such site-specific equipment may include, but is not limited to, special lifting devices, the transfer trailer and the skid positioning system.

II. DESIGN FEATURES

II.1 CODES AND STANDARDS

II.1.a Horizontal Storage Module (HSM)

The Standardized HSM and HSM-H reinforced concrete modules are designed to meet the requirements of ACI 349-85 and ACI 349-97 Editions, respectively.

Load combinations specified in ANSI 57.9-1984, Section 6.17.3.1 are used for combining normal operating, off-normal, and accident loads for the HSM.

If an ISFSI site is located in a coastal salt water marine atmosphere, then any load-bearing carbon steel DSC support structure rail components of any associated HSM shall be procured with a minimum of 0.20 percent copper content or stainless steel material shall be used for corrosion resistance. For weld filler material used with carbon steel, 1% or more nickel bearing weld material would also be acceptable in lieu of 0.20% copper content.

II.1.b Dry Shielded Canister (DSC)

The DSCs are designed, fabricated and inspected to the maximum practical extent in accordance with ASME Boiler and Pressure Vessel Code Section III, Division 1, Subsections NB, NF, and NG for Class 1 components and supports. The ASME code edition years and any addenda for the various DSC types are provided in the table below.

ASME code requirements for basket assemblies apply only to important to safety category A components.

DSC Type	Applicable Code	Edition/Year
24P/52B/ 24PHB	ASME B&PV Code, Section III, Division 1, Subsections NB and NF	1983 Edition with Winter 1985 Addenda
61BT	ASME B&PV Code, Section III, Division 1, Subsections NB, NG and NF, including Code Case N-595-1	1998 Edition with 1999 Addenda
32PT, 24PTH*	ASME B&PV Code, Section III, Division 1, Subsections NB, NG and NF, including Code Case N-595-2	1998 Edition with Addenda through 2000
61BTH, 32PTH1	ASME B&PV Code, Section III, Division 1, Subsections NB, NG and NF	1998 Edition with Addenda through 2000
69BTH, 37PTH	ASME B&PV Code, Section III, Division 1, Subsection NB, NG, and NF	2004 Edition with Addenda through 2006

** ASME B&PV Code, Section III, Division 1, Subsections NG and NF are not applicable to the Type 3 basket assembly in 24PTH-S, 24PTH-L or the 24PTH-S-LC DSCs.*

II.1.c Transfer Cask (TC)

The TC is designed, to the maximum practical extent in accordance with ASME Boiler and Pressure Vessel Code Section III, Subsection NC for Class 2 vessels.

The ASME Code edition year and any addenda are provided in the table below.

TC	Applicable Code	Edition/Year
OS197/OS197H OS197FC/OS197HFC OS197L/OS197FC-B OS197HFC-B	ASME B&PV Code, Section III, Division 1, Subsection NC	1983 Edition with Winter 1985 Addenda
OS200 OS200FC	ASME B&PV Code, Section III, Division 1, Subsection NC	1998 Edition with Addenda through 2000

For the OS197L TC, the supplementary trailer shield is designed to resist the normal operating dead weight and handling loads in accordance with "Manual of Steel Construction Allowable Stress Design", 9th Edition, American Institute of Steel Construction, Inc.

For the OS197L TC, the decontamination area shielding is designed to resist the normal operation dead weight, lifting loads, and seismic load in accordance with "Manual of Steel Construction Allowable Stress Design," 9th Edition, American Institute of Steel Construction, Inc.

II.1.d ASME Code Alternatives

ASME Code alternatives for DSC pressure boundary or confinement boundary components, DSC basket assembly components, and TC components, can be found in CoC Appendix C.

Proposed alternatives to the ASME code, other than the aforementioned ASME Code alternatives may be used when authorized by the Director of the Office of Nuclear Material Safety and Safeguards, or designee. The applicant should demonstrate that:

1. The proposed alternatives would provide an acceptable level of quality and safety, or
2. Compliance with the specified requirements of ASME Code, Section III, Edition year and Addenda would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Requests for exceptions in accordance with this section should be submitted in accordance with 10 CFR 72.4.

II.2 STORAGE LOCATION DESIGN FEATURES

The following storage location design features and parameters shall be verified by the system user to assure technical agreement with the UFSAR.

II.2.a Storage Configuration

HSMs are placed together in single rows or back-to-back arrays. An end shield wall is placed on the outside end of any loaded outside HSM. A rear shield wall is placed on the rear of any single row loaded HSM.

A minimum of two (2) HSM-H modules are required to be placed adjacent to each other for stability during design basis flood loads.

A minimum of three (3) high seismic option HSM-H modules are to be connected with each other.

II.3 TC DESIGN FEATURES

II.3.a The TC is designed and fabricated as a lifting device to meet NUREG-0612 and ANSI N14.6 requirements.

II.3.b The OS197L TC shall only be used with DSC models 61BT and 32PT. The following TC design features and parameters for the OS197L TC shall be verified by the system user to assure technical agreement with the UFSAR.

1. The OS197L TC decontamination area shielding shall be used for all LOADING OPERATIONS when the TC is not in the spent fuel pool or suspended on the crane. The OS197L TC trailer shielding shall be used for all TRANSFER OPERATIONS. This shielding is necessary to ensure the OS197L TC system provides adequate radiation protection when the TC is not in the pool, or when the TC is not handled by remote operations.
2. The bare OS197L TC, when carrying a loaded DSC, shall be handled using remote operations, including the use of laser/optical targeting and camera for confirmation of the cask location.
3. The placement of the Outer Top Shield of the Transfer Trailer Shield on the loaded OS197L TC shall take place in the FUEL BUILDING unless the FUEL BUILDING load limits would be exceeded. In that case, the placement of the Outer Top Shield takes place outside the FUEL BUILDING. If the placement of the Outer Top Shield is delayed due to building load limits, it must occur as soon as the Transfer Trailer has been moved to an area with acceptable load limits. The licensee must plan accordingly to minimize, to the greatest extent practicable, the delay of the placement of this Outer Top Shield.
4. During TRANSFER OPERATION of a loaded OS197L TC, every hour, visually monitor the Outer Top Trailer Shield vents and the opening around the cask ends for any sign of steaming which may indicate leakage of water from the cask neutron shield (NS). If steaming is determined to be due to leakage of NS water and not due to any rain or snow or other ambient conditions, then licensee must take appropriate corrective actions including use of supplemental cooling or replenishing the NS water or terminating the transfer operation and returning the loaded cask to the FUEL BUILDING for further assessment.

III. RENEWED COC

III.1 72.212 EVALUATIONS FOR RENEWED COC USE

Any general licensee that initiates spent fuel dry storage operations with the Standardized NUHOMS® Horizontal Modular Storage System after the effective date of the renewal of the CoC and any general licensee operating a Standardized NUHOMS® Horizontal Modular Storage System as of the effective date of the renewal of the CoC, including those that put additional storage systems into service after that date, shall:

a. as part of the evaluations required by 10 CFR 72.212(b)(5), include evaluations related to the terms, conditions, and specifications of this CoC amendment as modified (i.e., changed or added) as a result of the renewal of the CoC;

b. as part of the document review required by 10 CFR 72.212(b)(6), include a review of the FSAR changes resulting from the renewal of the CoC and the NRC Safety Evaluation Report related to the renewal of the CoC; and

c. ensure that the evaluations required by 10 CFR 72.212(b)(7) and (8) capture the evaluations and review described in (a.) and (b.) of this CoC condition.

III.2 AMENDMENTS AND REVISIONS FOR RENEWED COC

All future amendments and revisions to this CoC shall include evaluations of the impacts to aging management activities (i.e. time-limited aging analyses and aging management programs) to assure they remain adequate for any changes to SSCs within the scope of renewal.

FOR THE NUCLEAR REGULATORY COMMISSION

John B. McKirgan, Chief
Storage and Transportation Licensing Branch
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

Appendix A. Inspections, Tests and Evaluations
Appendix B. Technical Specifications
Appendix C. ASME Code Alternatives

Dated:

<u>Enclosure 4 to E-60447</u>

Proposed CoC Appendix A Inspections, Tests, and Evaluations, CoC 1004 Amendment 18, Revision 0

RENEWED AMENDMENT NUMBER *18* TO COC 1004

APPENDIX A

INSPECTIONS, TESTS, AND EVALUATIONS FOR THE STANDARDIZED NUHOMS®
HORIZONTAL MODULAR STORAGE SYSTEM

DOCKET 72-1004

TABLE OF CONTENTS

1.0 USE AND APPLICATION

1.1 Definitions

Certain terms of this section appear in capitalized type and are applicable throughout these Inspections, Tests, and Evaluations. The definitions for those terms can be found in CoC 1004 Appendix B, Section 1.1.

2.0 Inspections, Tests, and Evaluations for Canister Criticality Control

The neutron absorber used for criticality control in the DRY SHIELDED CANISTER (DSC) basket may consist of any of the following types of material:

- Borated aluminum
- Boron carbide / aluminum metal matrix composite (MMC)
- BORAL® (except for the 32PT DSC)

The minimum B-10 areal density requirements are specified in in the CoC 1004 Appendix B Technical Specifications (TS) tables referred to in the table below:

DSC Model	Basket Type	Minimum B-10 Areal Density for Absorber Plates or Poison Rod Assemblies
24P and 24PHB	N/A	These DSC models do not contain borated absorber plates. Poison rod assemblies are not credited.
52B	N/A	The 52B utilizes borated stainless steel basket plates rather than separate absorber plates. The minimum natural boron content is 16 mg/cm^2.
61BT	A, B or C	Per TS Table 1-1k
32PT	A, A1, A2, B, C or D	Per TS Table 1-1h
24PTH	1A, 1B, or 1C 2A, 2B or 2C *3D*	Per TS Table 1-1 r
61BTH	A, B, C, D, E or F	Per TS Table 1-1v or Table 1-1w or Table 1-1w1 or Table 1-1x
32PTH1	1A, 1B, 1C, 1D, or 1E 2A, 2B, 2C, 2D, or 2E	Per TS Table 1-1ff
69BTH	A, B, C, D, E, or F	Per TS Table 1-1jj or Table 1-1kk
37PTH	There is just one basket.	Per TS Table 1-1rr or Table 1-1ss

2.1 Acceptance of Borated Aluminum

In no case shall the boron content in the aluminum or aluminum alloy exceed 5% by weight.

Neutron Transmission acceptance testing procedures shall be subject to approval by the Certificate Holder.

2.2 Acceptance of Boron carbide / aluminum metal matrix composite (MMC)

The boron carbide content shall not exceed 40% by volume. The boron carbide content for MMCs with an integral aluminum cladding or produced by molten metal infiltration shall not exceed 50% by volume.

The final MMC product shall have density greater than 98% of theoretical density demonstrated by qualification testing. For MMC with an integral cladding, the final density of the core shall be greater than 97% of theoretical density demonstrated by qualification testing.

At least 50% by weight of the B_4C particles in MMCs shall be smaller than 40 microns. No more than 10% of the particles shall be over 60 microns.

2.3 Acceptance of BORAL®

Before rolling, at least 80% by weight of the B_4C particles in BORAL® shall be smaller than 200 microns. The nominal boron carbide content shall be limited to 65% (+ 2% tolerance limit) of the core by weight.

2.4 High Strength Low Alloy Steel for Type 3 Basket Structure for the 24PTH DSC.

The basket structural material shall be a high strength low alloy (HSLA) steel meeting one of the following requirements A, B, or C:

A. ASTM A829 Gr 4130 or AMS 6345 SAE 4130, quenched and tempered at not less than 1050°F, 103.6 ksi minimum yield strength and 123.1 ksi minimum ultimate strength at room temperature.

B. ASME SA-517 Gr A, B, E, F, or P.

C. Other HSLA steel, with the specified heat treatment, meeting these qualification and acceptance criteria:

i. If quenched and tempered, the tempering temperature shall be at no less than 1000 °F,

ii. Qualified prior to first use by testing at least two lots and demonstrating that the fracture toughness value $K_{JIc} \geq 150$ ksi √in at ≤ -40 °F with 95% confidence.

iii. Qualified prior to first use by testing at least two lots and demonstrating that the 95% lower tolerance limit of yield strength and ultimate strength ≥ the values in UFSAR Table P.3.3-10.

iv. Meet production acceptance criteria based on the 95% lower tolerance limit of yield strength and ultimate strength at room temperature as determined by qualification testing described in Section 2.4.C.iii.

The basket structural material shall also meet one of the following production acceptance criteria for impact testing at ≤ -40 °F:

a. Charpy testing per ASTM A370, minimum absorbed energy 25 ft-lb average, 20 ft-lb lowest of three (for sub-size specimens, reduce these criteria per ASTM A370-17 Table 9), or

b. *Dynamic tear testing per ASTM E604 with acceptance criterion minimum 80% shear fracture appearance.*

3.0 Storage Location Inspections, Tests, and Evaluations

3.1 Site-Specific Parameters and Analyses

The potential Standardized NUHOMS® System user (general licensee) shall perform the verifications and evaluations in accordance with 10 CFR 72.212 before the use of the system under the general license. The following parameters and analyses shall be verified by the system user for applicability at their specific site. Other natural phenomena events, such as lightning (damage to electrical system, e.g., thermal performance monitoring), tsunamis, hurricanes, and seiches, are site specific and their effects are generally bounded by other events, but they should be evaluated by the user.

1. The analyzed flood conditions of 50 ft. height of water (full submergence of the loaded HORIZONTAL STORAGE MODULE (HSM) with DSC) and water velocity of 15 fps.
2. One-hundred year roof snow load of 110 psf.
3. The maximum yearly average temperature shall be 70 °F for the 24P, 52B and 61BT DSCs only. The average daily ambient temperature shall be 100 °F or less for the 52B, 61BT, 32PT, 24PHB, 24PTH, 61BTH, 69BTH, and 37PTH DSCs. For the 32PTH1 DSC, the average daily ambient temperature shall be 106 °F or less.
4. The temperature extremes either of 125 °F (for the 24P, 52B and 61BT DSCs) or 117 °F (for the 32PT, 24PHB, 24PTH, 61BTH, 32PTH1, 69BTH, and 37PTH DSCs). The 117 °F extreme ambient temperature corresponds to a 24-hour calculated average temperature of 102 °F for the 32PT DSC only. The extreme minimum ambient temperature is –40 °F for storage of the DSC inside HSM.
5. The potential for fires and explosions shall be addressed, based on site-specific considerations.
6. Supplemental shielding: In cases where supplemental shielding and engineered features (i.e., earthen berms, shield walls) are used to ensure that the requirements of 10 CFR 72.104(a) are met, such features are to be considered important to safety and must be evaluated to determine the applicable quality assurance category.
7. Seismic restraints shall be provided to prevent overturning of a loaded TRANSFER CASK (TC) in a vertical orientation in the plant's FUEL BUILDING during a seismic event if a certificate holder determines that the horizontal acceleration is 0.4g or greater. The determination of the horizontal acceleration acting at the center of gravity (CG) of the loaded TC must be based on a peak horizontal ground acceleration at the site.
8. Site design spectra seismic zero period acceleration (ZPA) levels of 0.25g horizontal and 0.17g vertical for the systems using the Standardized HSMs. Site design spectra seismic ZPA for systems using the HSM-H modules are payload specific as follows:
   - 0.3g horizontal and 0.2g vertical for the 24PTH and 61BTH DSCs
   - 0.3g horizontal and 0.25g vertical for the 32PTH1, 69BTH, and 37PTH DSCs

– Site design spectra seismic ZPA levels for the 32PT, 61BT, *24PTH with Baskets Type 1 and 2*, 61BTH, 32PTH1, 69BTH, and 37PTH DSC systems when stored within the “high seismic option” HSM-H modules are 1.0g horizontal and 1.0g vertical.

9. The storage pad location shall have no potential for liquefaction at the site-specific safe shutdown earthquake (SSE) level.
10. Any other site parameters or considerations that could decrease the effectiveness of cask systems important to safety.
11. The storage pad location shall be evaluated for the effects of soil-structure interaction which may affect the response of the loaded HSMs. Seismic responses at the location of the HSM CG may be obtained from the soil-structure interaction analyses.

3.2 Transfer Cask Dose Rate Evaluation

The TC total dose rate shall be less than or equal to the value specified below for the various DSCs. The dose rates should be measured as soon as possible after the TC is removed from the spent fuel pool when in the configuration defined below but before the TC is down ended on the transfer trailer to be transferred to the ISFSI.

Dose Rate Limits for the TC (except OS197L TC)

DSC Model	TC, Axial Surface Dose Rate Limit (mrem/hour)	TC, Radial Surface Dose Rate Limit (mrem/hour)
24P	600	600
52B	600	600
61BT	800	1200
32PT	900	1100
24PHB	1200	1200
24PTH	*1200*	1500
61BTH	2910	2860
32PTH1	1300	700
69BTH	2050	700
37PTH	1300	700

Dose Rate Limits for the OS197L TC

DSC Model	Axial Surface Dose Rate Limit (mrem/hour)	TC, Radial Decontamination Area Surface Dose Rate Limit (mrem/hour)
61BT	800	70
32PT	900	70

The following configuration shall be employed for all TC axial dose rate measurements:

- Neutron shielding material present in the TC NS cavity

- TC/DSC annulus filled with water and water level in the annulus is at least up to the top of the fuel assembly level
- Bulk water removed from the DSC cavity. For the 24PHB DSC only, the DSC cavity is filled with water such that the fuel assemblies are submerged.
- DSC shield plug installed
- DSC inner top cover plate installed
- Temporary shielding consisting of a minimum of 3″ NS-3 and a minimum of 1″ steel or effective equivalent above the inner top cover plate, which is the analyzed configuration; however, if the dose rate limits above can be met without employing temporary shielding, temporary shielding is not required.

The following locations shall be employed for all TC axial dose rate measurements:

- Five locations are chosen within a radius of 10 to 25 inches (diameter of 20 to 50 inches) around the DSC centerline on the top surface of the temporary shielding (as described earlier) or the inner top cover plate if temporary shielding is not employed.
- None of these measurements shall exceed the specified dose rate limits.

The following configuration shall be employed for all TC radial dose rate measurements:

- Neutron shielding material present in the TC NS cavity
- TC/DSC annulus water drained
- DSC cavity vacuum drying is complete
- DSC outer top cover plate welding completed
- TC top lid installed
- TC is in a vertical position

In addition to the configuration above, decontamination area shielding is installed in the radial direction with a nominal thickness of 6 inches of steel only for the OS197L TC.

The following locations shall be employed for all TC radial dose rate measurements:

- Eight approximately equally spaced locations around the radial surface of the cask at an axial location corresponding to within approximately 24″ of the center of the TC.
- For the OS197L TC only, dose rate measurements are taken on the surface of the decontamination area shielding.
- None of these measurements shall exceed the specified dose rate limits.

The TC dose rate limits are specified to maintain dose rates as-low-as-reasonably-achievable during DSC TRANSFER OPERATIONS. Additional temporary shielding can be employed before and/or after dose rate measurements to further reduce dose rates. These dose rate limits are based on the shielding analysis for the various DSCs included in the UFSAR Chapter 7 and Appendix J, Appendix K, Appendix M, Appendix N, Appendix P, Appendix T, Appendix U, Appendix W, Appendix Y and Appendix Z with some added margin for uncertainty.

If the measured dose rates exceed above values, place temporary shielding around the affected areas of the TC and review plant records of the fuel assemblies which have been placed in the DSC to ensure that they conform to the fuel specification of Technical Specification 2.1 for the applicable DSCs. Submit a letter report to the NRC within 30

days summarizing actions taken and the results of the surveillance, investigation and findings. The report must be submitted using instructions in 10 CFR 72.4 with a copy sent to the administrator of the appropriate NRC regional office.

3.3 HSM or HSM-H Dose Rate Evaluation Program

3.3.1 The licensee shall establish a set of HSM dose rate limits which are to be applied to DSCs used at the site to ensure the limits of 10 CFR Part 20 and 10 CFR 72.104 are met. Limits shall establish peak dose rates at the following three locations:

1. HSM front bird screen,
2. Outside HSM door, and
3. End shield wall exterior.

3.3.2 Notwithstanding the limits established in 3.3.1, the dose rate limits listed below for the Standardized HSM and HSM-H shall be met when a specific DSC model loaded with fuel is stored within a module:

Dose Rate Limits for the Standardized HSM and HSM-H

DSC Model	HSM Model	Dose Rate Limit HSM Front Bird Screen (mrem/hour)	Dose Rate Limit Outside HSM Door (mrem/hour)	Dose Rate Limit End Shield Wall Exterior (mrem/hour)
24P	Standardized HSM	350	70	55
52B	Standardized HSM	350	70	55
61BT	Standardized HSM	1300	200	15
32PT	Standardized HSM	1000	250	10
24PHB	Standardized HSM	525	20	275
24PTH-S-LC	Standardized HSM	600	*105*	400
61BTH	Standardized HSM	200	100	15
24PTH	HSM-H	1400	5	20
61BTH	HSM-H	2330	5	20
32PTH1	HSM-H	600	5	20
69BTH	HSM-H	250	5	20
37PTH	HSM-H	600	5	20

The number and locations of the dose rate measurements on the surface of front bird screen of the HSM are indicated below:

- Two dose rate measurements are taken for each front bird screen for the HSM-H. These dose rate measurements are approximately within 24 inches measured from the surface of the ISFSI pad and are approximately 6 inches from the centerline of each front bird screen.
- For the standardized HSM models, three dose rates are taken on the surface of each front bird screen. The central dose location shall be at the approximate centerline of the front bird screen. The other two dose locations are spaced at approximately equal distance on either side of the central dose location. All dose locations shall be at least 24 inches above the pad surface.
- None of these measurements shall exceed the specified dose rate limits.

The number and locations of the dose rate measurements on the outside surface of the HSM door are indicated below:

- Five locations within a radius of approximately 25 inches (diameter of approximately 50 inches) around the door centerline.
- None of these measurements shall exceed the specified dose rate limits.

The number and locations of the dose rate measurements on the exterior surface of the HSM end shield wall are indicated below:

- Five dose rate measurements are taken for every end shield wall. The central dose location shall be approximately 10 feet from the HSM front surface and at an elevation corresponding to the approximate door centerline. The remaining four dose locations shall be within a radius of approximately 25 inches (diameter of approximately 50 inches) around the central dose location.
- None of these measurements shall exceed the specified dose rate limits.

3.3.3 If the measured dose rates do not meet the limits of 3.3.1 or 3.3.2, whichever are lower, the licensee shall take the following actions until compliance is achieved:

a. Ensure proper installation of the HSM door and check for any streaming around the door, AND
b. Administratively verify that the spent fuel assemblies loaded in the DSC meet Technical Specification 2.0 limits, AND
c. Ensure that the DSC is properly positioned on the support rails. If compliance is not achieved then proceed to d and e.
d. Perform an analysis to determine that placement of the as-loaded DSC at the ISFSI will not cause the ISFSI to exceed the radiation exposure limits of 10 CFR Part 20 and 10 CFR 72.104(a) and ALARA and/or provide additional temporary or permanent shielding to assure exposure limits are not exceeded, and
e. Notify the U.S. Nuclear Regulatory Commission (Director of the Office of Nuclear Material Safety and Safeguards) within 30 days, summarizing the actions taken and the results of the surveillance, investigation and findings. This report must be submitted using instructions in 10 CFR 72.4 with a copy sent to the administrator of the appropriate NRC regional office.

4.0 Fabrication-Related Inspections, Tests, and Evaluations

4.1 Leakage Testing of the Confinement Boundary

The DSC shell (including the inner bottom cover plate) base metal and associated confinement boundary welds are tested during fabrication to $1x10^{-7}$ ref cm^3/s.

Following completion of the seal weld of the DSC inner top cover plate/top shield plug assembly, (including vent and siphon port cover), this weld shall be leak tested with a helium leak detection device. The leak testing is performed to the criteria as listed below:

DSC Model	Leak Test Criterion
24P, 52B	≤$1x10^{-4}$atm.cm^3/sec
61BT, 32PT, 24PHB, 24PTH, 61BTH, 32PTH1, 69BTH, or 37PTH	≤$1x10^{-7}$Ref.cm^3/sec

If the leakage rate of the inner seal weld exceeds the specified criterion, check and repair (a) the inner seal welds (b) the inner top cover and port covers for any surface indications resulting in leakage.

4.2 Concrete Testing for HSM-H

HSM-H concrete shall be tested during the fabrication process for elevated temperatures to verify that there are no significant signs of spalling or cracking and that the concrete compressive strength is greater than that assumed in the structural analysis. Tests shall be performed at or above the calculated peak temperature and for a period no less than the 40-hour duration of HSM-H blocked vent transient for components exceeding 350 °F.

HSM concrete temperature testing shall be performed whenever there is a significant change in the cement, aggregates or water-cement ratio of the concrete mix design.

4.3 DSC Closure Weld Non-Destructive Examination

All DSC closure welds except those subjected to full volumetric inspection shall be liquid penetrant tested in accordance with the requirements of the ASME Boiler and Pressure Vessel Code Section III, Division 1, Article NB-5000. The liquid penetrant test acceptance standards shall be those described in Subsection NB-5350 of the Code.

These criteria is applicable to all DSCs. The welds include inner and outer top and bottom covers, and vent and siphon port covers.

If the liquid penetrant test indicates that the weld is unacceptable:

1. The weld shall be repaired in accordance with approved ASME procedures, and
2. The new weld shall be re-examined in accordance with this specification.

<u>Enclosure 5 to E-60447</u>

Proposed CoC Appendix B Technical Specifications, CoC 1004 Amendment 18, Revision 0

RENEWED AMENDMENT NUMBER 18 TO COC 1004

APPENDIX B

TECHNICAL SPECIFICATIONS FOR THE STANDARDIZED NUHOMS® HORIZONTAL MODULAR STORAGE SYSTEM

DOCKET 72-1004

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1.0 USE AND APPLICATION

1.1 Definitions

--NOTE--

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

Term	Definition
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
HORIZONTAL STORAGE MODULE (HSM)	The HSM (Standardized HSM, HSM-H, high seismic option for HSM-H or other models enveloped by these designs) is a reinforced concrete structure for storage of a loaded DSC at a spent fuel storage installation. e.g., Standardized HSM includes HSM Model 80, Model 102, Model 152 or Model 202 as described in the Updated Final Safety Analysis Report (UFSAR). The generic term “HSM-H” refers to HSM-H or high seismic option for HSM-H except where a specific HSM-H configuration is called out.
DRY SHIELDED CANISTER (DSC)	A DSC (Model 24P, 52B, 61BT, 32PT, 24PHB, 24PTH, 61BTH, 32PTH1, 69BTH, 37PTH or other models enveloped by these designs) is a welded vessel that provides confinement of fuel assemblies in an inert atmosphere.
INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)	A complex designed and constructed for the interim storage of spent nuclear fuel, solid reactor-related GTCC waste, and other radioactive materials associated with spent fuel and reactor-related GTCC waste storage.
INTACT FUEL ASSEMBLY	INTACT FUEL ASSEMBLY is defined as an assembly containing fuel rods with no known or suspected cladding defects greater than hairline cracks or pin hole leaks. Non-cladding material damage is acceptable to the extent that the fuel assembly can be handled by normal means and the fuel assembly is retrievable after all normal and off-normal conditions.
DAMAGED FUEL ASSEMBLY, FAILED FUEL ASSEMBLY	The definitions for damaged or failed fuel assemblies are in the fuel specification tables for each DSC referred to in Technical Specification 2.1.

(continued)

1.1 Definitions

LOADING OPERATIONS	LOADING OPERATIONS include all licensed activities on a DSC in a TC while it is being loaded with fuel assemblies. LOADING OPERATIONS begin when the first fuel assembly is placed in the DSC and end when the TC is ready for TRANSFER OPERATIONS (i.e., when the cask is in a horizontal position on the trailer). The placement of the Outer Top Trailer Shielding onto the OS197L TC is considered part of the LOADING OPERATIONS. LOADING OPERATIONS do not include DSC transfer between the TC and the HSM.
OPERABLE/OPERABILITY	A system, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, and other auxiliary equipment that are required for the system, component or device to perform its specified safety function(s) are also capable of performing their related support functions(s).
STORAGE OPERATIONS	STORAGE OPERATIONS include all licensed activities that are performed at the ISFSI while a DSC containing fuel assemblies is located in an HSM on the storage pad within the ISFSI perimeter. STORAGE OPERATIONS do not include DSC transfer between the TC and the HSM.
TRANSFER CASK (TC)	The TC (Standardized TC, OS197, OS197H, OS197L, OS197FC, OS197FC-B, OS197HFC, OS197HFC-B, OS200, OS200FC TC) consists of a licensed NUHOMS® onsite transfer cask.
TRANSFER OPERATIONS	TRANSFER OPERATIONS include all licensed activities involving the movement of a TC loaded with a DSC containing fuel assemblies. TRANSFER OPERATIONS begin after the TC has been placed horizontal on the transfer trailer (and for the OS197L, the supplemental trailer shielding has been put in place) ready for TRANSFER OPERATIONS and end when the DSC is at its destination and no longer horizontal on the transfer trailer. TRANSFER OPERATIONS include transfer of a DSC between the TC and the HSM.

(continued)

UNLOADING OPERATIONS	UNLOADING OPERATIONS include all licensed activities on a DSC to unload fuel assemblies. UNLOADING OPERATIONS begin when the TC is no longer horizontal on the transfer trailer and end when the last fuel assembly has been removed from the DSC. UNLOADING OPERATIONS do not include DSC transfer between the TC and the HSM.
FUEL BUILDING	The FUEL BUILDING is the site-specific area or a facility where the LOADING OPERATIONS take place.
BLEU FUEL MATERIAL	Blended Low Enriched Uranium (BLEU) fuel material is identical to UO_2 fuel material except for the presence of higher cobalt impurity.
UNANALYZED FUEL (UF)	UNANALYZED FUEL is BWR fuel with an enrichment below the minimum enrichments defined in Table 1-4e (for the Standardized HSM) and Table 1-4f (for the HSM-H).

1.2 Logical Connectors

PURPOSE	The purpose of this section is to explain the meaning of logical connectors. Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete Conditions, Required Actions, Completion Times, Surveillances, and Frequencies. The only logical connectors that appear in TS are AND and OR. The physical arrangement of these connectors constitutes logical conventions with specific meanings.
BACKGROUND	Several levels of logic may be used to state Required Actions. These levels are identified by the placement (or nesting) of the logical connectors and by the number assigned to each Required Action. The first level of logic is identified by the first digit of the number assigned to a Required Action and the placement of the logical connector in the first level of nesting (i.e., left justified with the number of the Required Action). The successive levels of logic are identified by additional digits of the Required Action number and by successive indentions of the logical connectors. When logical connectors are used to state a Condition, Completion Time, Surveillance, or Frequency, only the first level of logic is used, and the logical connector is left justified with the statement of the Condition, Completion Time, Surveillance, or Frequency.
EXAMPLES	The following examples illustrate the use of logical connectors:

EXAMPLE 1.2-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO (Limiting Condition for Operation) not met.	A.1 Verify… AND A.2 Restore…	

In this example the logical connector AND is used to indicate that when in Condition A, both Required Actions A.1 and A.2 must be completed.

(continued)

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Stop… OR A.2 A.2.1 Verify… AND A.2.2 A.2.2.1 Reduce… OR A.2.2.2 Perform… OR A.3 Remove…	

This example represents a more complicated use of logical connectors. Required Actions A.1, A.2, and A.3 are alternative choices, only one of which must be performed as indicated by the use of the logical connector OR and the left justified placement. Any one of these three ACTIONS may be chosen. If A.2 is chosen, then both A.2.1 and A.2.2 must be performed as indicated by the logical connector AND. Required Action A.2.2 is met by performing A.2.2.1 or A.2.2.2. The indented position of the logical connector OR indicates that A.2.2.1 and A.2.2.2 are alternative choices, only one of which must be performed.

1.3 Completion Times

PURPOSE	The purpose of this section is to establish the Completion Times convention and to provide guidance for its use.
BACKGROUND	Limiting Conditions for Operation (LCOs) specify the lowest functional capability or performance levels of equipment required for safe operation of the facility. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO are not met. Specified with each stated Condition are Required Action(s) and Completion Time(s).
DESCRIPTION	The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the Cask System is in a specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the Cask System is not within the LCO Applicability. Once a Condition has been entered, subsequent subsystems, components, or variables expressed in the Condition, discovered to be not within limits, will <u>not</u> result in separate entry into the Condition unless specifically stated. The Required Actions of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition.

(continued)

1.3 Completion Times

EXAMPLES

The following examples illustrate the use of Completion Times with different types of Conditions and Changing Conditions.

EXAMPLE 1.3-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Complete Action B.1 AND B.2 Complete Action B.2	12 hours 36 hours

Condition B has two Required Actions. Each Required Action has its own separate Completion Time. Each Completion Time is referenced to the time that Condition B is entered.

The Required Actions of Condition B are to complete action B.1 within 12 hours AND complete action B.2 within 36 hours. A total of 12 hours is allowed for completing action B.1 and a total of 36 hours (not 48 hours) is allowed for completing action B.2 from the time that Condition B was entered. If action B.1 is completed within 6 hours, the time allowed for completing action B.2 is the next 30 hours because the total time allowed for completing action B.2 is 36 hours.

EXAMPLES

EXAMPLE 1.3-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One system not within limit.	A.1 Restore system to within limit.	7 days
B. Required Action and associated Completion Time not met.	B.1 Complete Action B.1. AND B.2 Complete Action B.2.	12 hours 36 hours

When a system is determined to not meet the LCO, Condition A is entered. If the system is not restored within 7 days, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start. If the system is restored after Condition B is entered, Condition A and B are exited, and therefore, the Required Actions of Condition B may be terminated.

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-3

ACTIONS

------------------------NOTE------------------------

Separate Condition entry is allowed for each component.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Restore compliance with LCO.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Complete Action B.1. AND B.2 Complete Action B.2.	6 hours 12 hours

The Note above the ACTIONS Table is a method of modifying how the Completion Time is tracked. If this method of modifying how the Completion Time is tracked was applicable only to a specific Condition, the Note would appear in that Condition rather than at the top of the ACTIONS Table.

The Note allows Condition A to be entered separately for each component, and Completion Times tracked on a per component basis. When a component is determined to not meet the LCO, Condition A is entered and its Completion Time starts. If subsequent components are determined to not meet the LCO, Condition A is entered for each component and separate Completion Times start and are tracked for each component.

IMMEDIATE COMPLETION TIME

When "Immediately" is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner.

1.4 Frequency

PURPOSE	The purpose of this section is to define the proper use and application of Frequency requirements.
DESCRIPTION	Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated Limiting Condition for Operation (LCO). An understanding of the correct application of the specified Frequency is necessary for compliance with the SR. The "Specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, Limiting Condition for Operation (LCO) and Surveillance Requirement (SR) Applicability. The "Specified Frequency" consists of the requirements of the Frequency column of each SR, as well as certain Notes in the Surveillance column that modify performance requirements. Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With a SR satisfied, SR 3.0.4 imposes no restriction.

(continued)

1.4 Frequency

EXAMPLES (continued)

The following examples illustrate the various ways that Frequencies are specified:

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify pressure within limit.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Commencement of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the stated Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is determined to not meet the LCO, a variable is outside specified limits, or the unit is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the facility is in a condition specified in the Applicability of the LCO, the LCO is not met in accordance with SR 3.0.1.

If the interval as specified by SR 3.0.2 is exceeded while the facility is not in a condition specified in the Applicability of the LCO for which performance of the SR is required, the Surveillance must be performed within the Frequency requirements of SR 3.0.2 prior to entry into the specified condition. Failure to do so would result in a violation of SR 3.0.4.

(continued)

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours prior to starting activity AND 24 hours thereafter

Example 1.4-2 has two Frequencies. The first is a one-time performance Frequency, and the second is of the type shown in Example 1.4-1. The logical connector "AND" indicates that both Frequency requirements must be met. Each time the example activity is to be performed, the Surveillance must be performed prior to starting the activity.

The use of "once" indicates a single performance will satisfy the specified Frequency (assuming no other Frequencies are connected by "AND"). This type of Frequency does not qualify for the 25% extension allowed by SR 3.0.2.

"Thereafter" indicates future performances must be established per SR 3.0.2, but only after a specified condition is first met (i.e., the "once" performance in this example). If the specified activity is canceled or not performed, the measurement of both intervals stops. New intervals start upon preparing to restart the specified activity.

2.0 FUNCTIONAL AND OPERATING LIMITS

2.1 Fuel to be Stored in the Standardized NUHOMS® System

The spent nuclear fuel to be stored in the Standardized NUHOMS® System is specific to each DSC model as listed below and shall meet all the requirements of the applicable Fuel Specification Tables, including the cross-referenced figures and tables listed in their applicable Fuel Specification Tables.

DSC MODEL	Applicable Fuel Specification
24P	Table 1-1a
52B	Table 1-1b
61BT	Table 1-1c and Table 1-1j
32PT	Table 1-1e
24PHB	Table 1-1i
24PTH*	Table 1-1l
61BTH	Table 1-1t
32PTH1	Table 1-1aa
69BTH	Table 1-1gg
37PTH	Table 1-1ll

*Note: The 24PTH-S-LC is only authorized for storage of B&W 15x15 fuel assemblies.

DSC models are listed in the CoC. If the model number has a variant which specifically has certain limitations, then those are specifically called out in the TS. Information concerning the fuel types, dose rate limits, or other technical specifications applies to all variants if they are not explicitly mentioned in the CoC or technical specifications. An example is the 24PTH DSC. In this case, 24PTH is the model number. The 24PTH-S, -L and –S-LC are variants with specific limitations, which are called out in the TS.

2.2 Functional and Operating Limits Violations Immediate Actions

If any Functional and Operating Limit of 2.1 is violated, the following actions shall be completed:

2.2.1 The affected fuel assemblies shall be placed in a safe condition.

3.0 LIMITING CONDITION FOR OPERATION (LCO) AND SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

LCO 3.0.1	LCOs shall be met during specified conditions in the Applicability, except as provided in LCO 3.0.2.
LCO 3.0.2	Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met. If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.
LCO 3.0.3	Not applicable to a spent fuel storage cask.
LCO 3.0.4	When an LCO is not met, entry into a specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the specified condition in the Applicability for an unlimited period of time. This Specification shall not prevent changes in specified conditions in the Applicability that are required to comply with ACTIONS, or that are related to the unloading of a DSC. Exceptions to this Specification are stated in the individual Specifications. These exceptions allow entry into specified conditions in the Applicability when the associated ACTIONS to be entered allow operation in the specified condition in the Applicability only for a limited period of time.
LCO 3.0.5	Not applicable to a spent fuel storage cask.

(continued)

3.0 Limiting Condition for Operation (LCO) and Surveillance Requirement (SR) Applicability

SR 3.0.1	SRs shall be met during the specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on equipment or variables outside specified limits.
SR 3.0.2	The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met. For Frequencies specified as "once," the above interval extension does not apply. If a Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance. Exceptions to this Specification are stated in the individual Specifications.
SR 3.0.3	If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is less. This delay period is permitted to allow performance of the Surveillance. If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered. When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.
SR 3.0.4	Entry into a specified condition in the Applicability of an LCO shall not be made unless the LCO's Surveillances have been met within their specified Frequency. This provision shall not prevent entry into specified conditions in the Applicability that are required to comply with ACTIONS or that are related to the unloading of a DSC.

3.1 Fuel Integrity

3.1.1 DSC Bulkwater Removal Medium and Vacuum Drying Pressure

LCO 3.1.1	Medium: Helium shall be used for all drainage of liquid water from the DSC. Pressure: The DSC vacuum drying pressure shall be sustained at or below 3 Torr (3 mm Hg) absolute for a period of at least 30 minutes following evacuation.
APPLICABILITY:	During LOADING OPERATIONS but before TRANSFER OPERATIONS.

(continued)

3.1 Fuel Integrity

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
Note: Not applicable until SR 3.1.1 is performed. A. If the required vacuum pressure cannot be obtained.	A.1 A.1.1 Confirm that the vacuum drying system is properly installed. Check and repair the vacuum drying system as necessary. <u>OR</u> A.1.2 Check and repair the seal weld between the inner top cover plate/ top shield plug assembly and the DSC shell.	30 days
	<u>OR</u> A.2 Establish helium pressure of at least 1.0 atm and no greater than 15 psig in the DSC.	30 days
	<u>OR</u> A.3 Flood the DSC with spent fuel pool water or water meeting the requirements of LCO 3.2.1 if applicable submerging all fuel assemblies.	30 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1	Verify that the DSC vacuum pressure is less than, or equal to, 3 Torr (3 mm Hg) absolute for at least 30 minutes following evacuation.	Once per DSC, after an acceptable NDE of the inner top cover plate/top shield plug assembly.

(continued)

3.1 Fuel Integrity

3.1.2 DSC Helium Backfill Pressure

LCO 3.1.2	(a) 24P or 52B DSC helium backfill pressure shall be 2.5 psig ± 2.5 psig (stable for 30 minutes after filling) after completion of vacuum drying. (b) 61BT, 32PT, 24PHB, 24PTH, 61BTH, 32PTH1, 69BTH, or 37PTH DSC helium backfill pressure shall be 2.5 psig ± 1.0 psig (stable for 30 minutes after filling) after completion of vacuum drying.
APPLICABILITY:	During LOADING OPERATIONS but before TRANSFER OPERATIONS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
Note: Not applicable until SR 3.1.2 is performed. A. The required backfill pressure cannot be obtained or stabilized.	A.1 A.1.1 Maintain helium atmosphere in the DSC cavity. AND A.1.2 Confirm, check and repair or replace as necessary the vacuum drying system, helium source and pressure gauge. AND A.1.3 Check and repair as necessary the seal weld between the inner top cover plate/top shield plug assembly and the DSC shell.	14 days
	OR A.2 Establish the DSC helium backfill pressure to within the limit. If pressure exceeds the criterion, release a sufficient quantity of helium to lower the DSC cavity pressure.	14 days

(continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	<u>OR</u> A.3 Flood the DSC with spent fuel pool water or water meeting the requirements of LCO 3.2.1, if applicable, submerging all fuel assemblies.	 14 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.2	(a) Verify that the 24P or 52B DSC helium backfill pressure is 2.5 psig ± 2.5 psig stable for 30 minutes after filling. (b) Verify that the 61BT, 32PT, 24PHB, 24PTH, 61BTH, 32PTH1, 69BTH, or 37PTH DSC helium backfill pressure is 2.5 psig ± 1 psig stable for 30 minutes after filling.	Once per DSC, after the completion of LCO 3.1.1 actions.

(continued)

3.1 Fuel Integrity

3.1.3 <u>Time Limit for Completion of DSC Transfer (24PTH, 61BTH Type 2, 32PTH1, 69BTH, or 37PTH DSC Only).</u>

LCO 3.1.3

DSC Model	Basket Type	Heat Load Zoning Configuration Number (HLZC)	Time Limit (hours)
24PTH-S or 24PTH-L	1A, 1B or 1C 1A, 1B or 1C 2A, 2B or 2C	4 1, 2, 3, or 6 1, 2, 3, or 4	No limit 9.5 25
24PTH-S-LC	*2A, 2B or 2C*	*5*	*No Limit*
24PTH-S or 24PTH-L	*3D*	*4*	*No Limit*
		1, 2, 3, or 6	*9.5*
24PTH-S-LC	*3D*	*5*	*No Limit*
61BTH, Type 2 Only	NA	1, 2, 3, 4, or 9 5, 6, or 8 7, 10, 11, 12, or 13	No limit 26 13
32PTH1	NA	3 1, 5, or 6 2 or 4	No limit 13 14 (Intact Fuel) 10 (Damaged Fuel)
69BTH	NA	1,2,3,4, 5, or 7 6	13 No limit
37PTH	NA	2 3	No limit 14

------------------------------------NOTE------------------------------------

The time limit for completion of a DSC transfer is defined as the time elapsed in hours after the initiation of draining of TC/DSC annulus water until the completion of insertion of the DSC into the HSM-H. For 24PTH-S or 24PTH-L DSCs with Basket Type 3D, the time limit for transfer operations is determined based on the the maximum allowable heat load of 40.8 kW. If the maximum heat load of a DSC is less than 40.8 kW, a new time limit can be determined to provide additional time for transfer operations. The calculated time limit shall not be less than the time limit specified in LCO 3.1.3. The calculation should be performed using the same methodology documented in the UFSAR.

APPLICABILITY: During LOADING OPERATIONS AND TRANSFER OPERATIONS.

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
Note: Not applicable until SR 3.1.3 is performed. A. The required time limit for completion of a DSC transfer not met.	A.1 If the TC is in the cask handling area in a vertical orientation, fill the TC/DSC annulus with clean water. <u>OR</u> A.2 If the TC is in a horizontal orientation on transfer skid, initiate air circulation in the TC/DSC annulus by starting one of the blowers provided on the transfer skid. <u>OR</u> A.3 Return the TC to the cask handling area and follow action A.1 above.	2 hours 2 hours* 2 hours

**After the blowers are turned off, the time limit for completion of DSC transfer is as indicated in the LCO 3.1.3 table.*

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.3	Verify that the time limit for completion of DSC transfer is met.	Once per DSC, after the completion of LCO 3.1.2 actions or after the initiation of draining of TC/DSC annulus water.

3.2 Cask Criticality Control

LCO 3.2.1 The boron concentration of the spent fuel pool water and the water added to the cavity of a loaded DSC (24P, 32PT, 24PHB, 24PTH, 32PTH1, or 37PTH) shall be greater than or equal to the boron concentration below:

DSC Model	Minimum Boron Concentration
24P	a. 2000 ppm for fuel with an equivalent unirradiated maximum planar average enrichment of less than or equal to 1.45 wt. % U-235 per Figure 1-1. b. 2350 ppm for fuel with an equivalent unirradiated maximum planar average enrichment of greater than 1.45 wt. % U-235 per Figure 1-1.
32PT	Per Table 1-1g or Table 1-1g1 or Table 1-1g2 or Table 1-1g3
24PHB	a. 2350 ppm for fuel with the maximum planar average enrichment of less than or equal to 4.0 wt. % U-235 based on the spent fuel assembly with the highest maximum planar average initial enrichment in the DSC. b. Per Figure 1-10 and Figure 1-10a for fuel with the maximum planar average initial enrichment of greater than 4.0 wt. % U-235 based on the spent fuel assembly with the highest maximum planar average initial enrichment in the DSC.
24PTH	Per Table 1-1p or Table 1-1q or Table 1-1q1
32PTH1	Per Table 1-1cc or Table 1-1dd or Table 1-1dd1
37PTH	Per Table 1-1oo or Table 1-1pp

APPLICABILITY: During LOADING OPERATIONS and UNLOADING OPERATIONS with fuel and liquid water in the DSC Cavity.

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Dissolved boron concentration limit not met.	A.1	Suspend loading of fuel assemblies into DSC.	Immediately
	AND		
	A.2		
	A.2.1	Add boron and re-sample, and test the concentration until the boron concentration is shown to be greater than that required. OR	Immediately
	A.2.2	Remove all fuel assemblies from DSC.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.1	Verify dissolved boron concentration limit in spent fuel pool water and water to be added to the DSC cavity is met using two independent measurements (two samples analyzed by different individuals) for LOADING OPERATIONS.	Within 4 hours before insertion of the first fuel assembly into the DSC. AND Every 48 hours thereafter while the DSC is in the spent fuel pool or until the fuel has been removed from the DSC.
SR 3.2.2	Verify dissolved boron concentration limit in spent fuel pool water and water to be added to the DSC cavity is met using two independent measurements (two samples analyzed by different individuals) for UNLOADING OPERATIONS.	Once within 4 hours prior to flooding DSC during UNLOADING OPERATIONS. AND Every 48 hours thereafter while the DSC is in the spent fuel pool or until the fuel has been removed from the DSC.

3.3 Radiation Safety

3.3.1 Dry Shielded Canister Surface Contamination Levels

LCO 3.3.1	The DSC smearable surface contamination levels on the outer top 1 foot surface of the DSC shall be less than 2,200 dpm/100 cm^2 from beta and gamma sources, and less than 220 dpm/100 cm^2 from alpha sources.
APPLICABILITY:	During LOADING OPERATIONS, following placement of each loaded TC/DSC into the cask decontamination area but prior to seal welding the DSC inner top cover plate/top shield plug assembly to the DSC shell.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The required limits are not met.	A. Use any available commercial decontamination technique on the entire length of the DSC outer surface to attempt to reduce the DSC surface contamination levels to below the required limits.	30 days
B. After completing Action A.1 contamination levels are still not met.	B. Remove the fuel assemblies from the DSC and put them back in the fuel pool, remove the DSC from the TC and decontaminate as necessary, insert the clean DSC back in the TC, check and replace the TC/DSC annulus seal if needed, and repeat the canister loading process.	30 days

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.1	Verify the DSC surface contamination levels.	Following placement of each loaded TC/DSC into the cask decontamination area, or after decontamination actions have been completed, but prior to seal welding of the DSC inner top cover plate/top shield plug assembly to the DSC shell.

4.0 ADMINISTRATIVE CONTROLS

4.1 Functional and Operating Limits Violations Reportability Actions

If any Functional and Operating Limit of Technical Specification 2.1 is violated, the following actions shall be completed:

4.1.1 Notify the NRC Operations Center per the requirements of 10 CFR 72.75.

4.1.2 Within 30 days, submit a separate report which describes the cause of the violation and the actions taken to restore compliance and prevent recurrence.

4.2 Procedures

4.2.1 Procedures

Each user of the standardized NUHOMS® System shall prepare, review, and approve written procedures for all normal operations (cask handling, loading movement and surveillance) and maintenance at the ISFSI prior to its operation. The operating procedures suggested generically in the UFSAR should provide the basis for the user's written operating procedures. Written procedures shall be established, implemented, and maintained.

4.2.2 Aging Management Program Procedures and Reporting

Each general licensee shall have a program to establish, implement, and maintain written procedures for each AMP described in the UFSAR. The program shall include provisions for changing AMP elements, as necessary, and within the limitations of the approved licensing bases to address new information on aging effects based on inspection findings and/or industry operating experience provided to the general licensee during the renewal period. Each procedure shall contain a reference to the specific aspect of the AMP element implemented by that procedure, and that reference shall be maintained even if the procedure is modified.

The general licensee shall establish and implement these written procedures within 180 days of the effective date of the renewal of the CoC or 180 days of the 20th anniversary of the loading of the first dry storage system at its site, whichever is later. The general licensee shall maintain these written procedures for as long as the general licensee continues to operate Standardized NUHOMS® Horizontal Modular Storage Systems inservice for longer than 20 years.

4.3 Programs

Each user of the NUHOMS® System will implement the following programs:

- Radiological Environmental Monitoring Program
- Radiation Protection Program

4.3.1 Radiological Environmental Monitoring Program

a) A radiological environmental monitoring program shall be implemented to verify that the annual dose equivalent to an individual located outside the ISFSI controlled area does not exceed the annual dose limits specified in 10 CFR 72.104(a).

b) Operation of the ISFSI does not create any radioactive materials or result in any credible liquid or gaseous effluent release.

4.3.2 Radiation Protection Program

As part of its evaluation pursuant to 10 CFR 72.212, the licensee shall perform an analysis to confirm that the limits of 10 CFR 72.104 will be satisfied under the actual site conditions and configurations considering the planned number of DSCs/HSMs to be used and the planned fuel loading conditions.

A dose assessment shall also be performed to account for occupational exposures during normal LOADING and TRANSFER OPERATIONS. If remote handling devices are used for movement of a TC during LOADING OPERATIONS then the dose assessment shall include recovery from the off-normal event of a potential malfunction of these devices. The licensee shall perform this dose assessment including occupational and public exposures from off-normal and accident conditions as a part of their 10 CFR 72.212 evaluations and augment their 10 CFR Part 20 radiation protection plan as required. The licensee shall develop appropriate measures (such as use of remote camera monitoring, use of temporary shielding etc.) to keep the dose rates ALARA during recovery from these potential malfunctions if needed. The licensee shall provide appropriate training to personnel involved in the possible repair/recovery operations.

TCs with a Liquid Neutron Shield, Other Than the OS197L TC

When using a TC with a liquid NS, if draining the NS is required to meet the plant lifting crane capacity limits, the NS shall be verified to be filled after completion of the lift. *When draining the* TC/DSC annulus*, monitor the NS continuously* during the first five minutes of the draining evolution to ensure the NS remains filled. Observation of water level in the expansion tank or some other means can be used to verify compliance to this requirement.

(continued)

4.3 Programs (continued)

OS197L TC

When using an OS197L TC, the ALARA assessment shall include at least the assessment of occupational and public exposures associated with the following:

1. The off-normal event of cask handling crane hangup during the movement of a loaded OS197L TC from the spent fuel pool to the decontamination area and from the decontamination area to the transfer trailer.
2. Surface, 100-meter and in the most affected unrestricted area (if any) dose rates from the transfer trailer without the top outer trailer shield in place for their impact on compliance with 10 CFR 72.104 and 10 CFR 20.1301(a)(2) dose values.
3. Worker doses associated with visual inspection of the openings at the top and bottom of the decontamination area shields.
4. Any other operation that has credible potential for high worker or public exposure.

For the OS197L, approved written procedures shall be developed and followed that address normal, off-normal, and accident conditions. Specifically, these procedures shall address the impact on plant operations due to potentially-increased radiation levels from the unshielded loaded OS197L. These may include operator actions required by 10 CFR Part 50 TSs, security guard actions, control room habitability, and response to alarms set off by the loaded OS197L.

Remote operations and appropriate ALARA practices shall be used due to very high dose rates during movement of the loaded OS197L TC from fuel pool to the decontamination area and from the decontamination area to the transfer trailer. When remote operations are used, approved written procedures shall be in place to govern these operations. When remote operations are used redundancy of equipment and their quality standards shall be considered and appropriate quality standards for the remote handling equipment shall be assigned.

When using an OS197L TC, the NS shall be verified to be filled when TC/DSC annulus draining operations are initiated and continually monitored during the first five minutes of the draining evolution to ensure the NS remains filled. The NS shall also be verified to be filled prior to movement of the loaded TC from the decontamination area (before the shield bell is removed). Observation of water level in the expansion tank or some other means can be used to verify compliance to this requirement.

4.3.3 Hydrogen Gas Monitoring for NUHOMS®

For all NUHOMS® DSCs, while welding the inner top cover plate during LOADING OPERATIONS, and while cutting the outer or inner top cover plates during UNLOADING OPERATIONS, hydrogen monitoring of the space under the shield plug in the DSC cavity is required, to ensure that the combustible mixture concentration remains below the flammability limit of 4%.

(continued)

4.3 Programs (continued)

4.3.4 Heavy Loads Requirements

Each lift of a DSC and TC must be made in accordance with the existing heavy loads requirements and procedures of the licensed facility at which the lift is made. A plant-specific safety review (under 10 CFR 50.59 or 10 CFR 72.48, if applicable) is required to show operational compliance with NUREG-0612 and or existing plant-specific heavy loads requirements.

If a single failure proof crane is not used, the licensee must evaluate the accidental drop of the shielding components of the OS197L TC under 10 CFR 50.59, 10 CFR 72.48, and 10 CFR 72.212, and evaluate the consequences of the accident drops.

4.3.5 Pre-Operational Testing and Training Exercise

A dry run training exercise of the loading, closure, handling, unloading and transfer of the Standardized NUHOMS® System shall be conducted by each licensee prior to the first use of the system to load spent nuclear fuel assemblies. The training exercise shall not be conducted with spent nuclear fuel in the canister. The dry run may be performed in an alternate step sequence from the actual procedural guidelines in the SAR. The dry run shall include, but need not be limited to the following:

Loading Operations

a) Fuel Loading
b) DSC sealing, drying and backfilling operations
c) TC downending and transport to the ISFSI
d) DSC transfer to the HSM
e) Use of the remote crane operations and laser/optical systems for targeting if the OS197L TC is to be used for loading
f) Manual crane operations if the OS197L TC is to be used for loading

Unloading Operations

a) DSC retrieval from the HSM
b) Flooding of the DSC
c) Opening of the DSC

(continued)

4.3 Programs (continued)

4.3.6 HSM or HSM-H Thermal Monitoring Program

This program provides guidance for temperature measurements that are used to monitor the thermal performance of each HSM.

Note: Only one of the two alternate surveillance activities listed below (4.3.6 a or 4.3.6 b) shall be performed for monitoring the HSM or HSM-H thermal performance.

a) Daily Visual Inspection of the HSM or HSM-H Air Inlets and Outlets (Front Wall and Roof Bird Screens)

A daily visual surveillance shall be conducted of the exterior of the air inlets and outlets to ensure that HSM air vents are not blocked for periods longer than assumed in the safety analysis.

In addition, a visual inspection shall be performed to ensure that no materials accumulate between the modules (only applicable for HSM designs with gap between adjacent modules) that could block the air flow.

If the surveillance shows blockage of air vents (any blockage of the outlet vents or more than 50% of the inlet vents), they shall be cleared. If the bird screen is damaged, it shall be replaced.

b) Daily HSM or HSM-H Temperature Measurement

Verify the thermal performance of each HSM or HSM-H via a direct temperature measurement on a daily basis. The temperature measurement could be any parameter such as (1) a direct measurement of the HSM or HSM-H temperatures, (2) a direct measurement of the DSC temperatures, (3) a comparison of the inlet and outlet temperature difference to predicted temperature differences for each individual HSM or HSM-H, or (4) other means that would identify and allow for the correction of off-normal thermal conditions that could lead to exceeding the concrete and fuel clad temperature criteria. If air temperatures are measured, they must be measured in such a manner as to obtain representative values of inlet and outlet air temperatures. Also, due to the proximity of adjacent HSM or HSM-H modules, care must be exercised to ensure that measured air temperatures reflect only the thermal performance of an individual module, and not the combined performance of adjacent modules.

(continued)

4.3 Programs (continued)

If the temperature measurement shows a significant unexplained difference, so as to indicate the approach to the concrete material or fuel clad temperature criteria, take appropriate action to determine the cause and return the canister to normal operation. If the measurement or other evidence suggests that the concrete accident temperature criteria (350 °F for HSM or the elevated temperature used in CoC Appendix A, Section 4.2 to perform concrete testing for HSM-H) has been exceeded for more than 24 hours, the licensee can provide analysis results and/or test results in accordance with ACI-349, Appendix A.4.3, demonstrating that the structural strength of the HSM or HSM-H has an adequate margin of safety. Take additional appropriate actions if necessary based on the results of the evaluation above.

The temperature measurement program should be of sufficient scope to provide the licensee with a positive means to identify conditions which threaten to approach temperature criteria for proper HSM or HSM-H operation and allow for the correction of off-normal thermal conditions that could lead to exceeding the concrete and fuel clad temperature criteria.

4.4 Cask Transfer Controls

4.4.1 TC/DSC Lifting/Handling Height Limits

The requirements of 10 CFR Part 72 apply to TC/DSC lifting/handling height limits outside the FUEL BUILDING. The requirements of 10 CFR Part 50 apply to TC/DSC lifting/handling height limits inside the FUEL BUILDING.

A. TC/DSC Lifting/Handling Height at Low Temperature and Location

Confirm the basket temperature and ambient temperature before the TRANSFER OPERATIONS of the loaded TC/DSC.

The lifting/handling height of a loaded TC/DSC, is limited as a function of location and low temperature as follows:

- No lifts or handling of the TC/DSC at any height are permissible at DSC basket temperatures below -20°F inside the FUEL BUILDING.
- The maximum lift height of the TC/DSC shall be 80 inches if the basket temperature is below 0°F but higher than -20°F inside the FUEL BUILDING.
- No lift height restriction is imposed on the TC/DSC if the basket temperature is higher than 0°F inside the FUEL BUILDING and a special lifting device that has at least twice the normal stress design factor for handling heavy loads, or a single failure proof handling system is used. If the special lifting device or single failure proof handling system is not used, measures shall be taken such that the drop g loads do not exceed those analyzed for the TC/DSC.
- When handling a loaded TC/DSC at a height greater than 80 inches outside the FUEL BUILDING, a special lifting device that has at least twice the normal stress design factor for handling heavy loads, or a single failure proof handling system shall be used and the basket temperature may not be lower than 0°F.

The requirements of 10 CFR Part 72 apply when the TC/DSC is in horizontal orientation on the transfer trailer. The requirements of 10 CFR Part 50 apply when the TC/DSC is being lifted/handled using the cask handling crane/hoist. (This distinction is valid only with respect to lifting/handling height limits.) If calculation or measurement of the basket temperature is unavailable, then the ambient temperature may be conservatively used.

B. TC/DSC TRANSFER OPERATIONS at High Ambient Temperatures

- The ambient temperature for TRANSFER OPERATIONS of a loaded TC/DSC (24P, 52B, 61BT, 32PT, 24PHB, 24PTH, 61BTH, 69BTH, or 37PTH DSC) shall not be greater than 100°F (when the cask is exposed to direct insolation). The corresponding ambient temperature limit for a TC with a loaded 32PTH1 DSC is 106°F.
- For TRANSFER OPERATIONS when ambient temperature exceeds 100°F (106°F for 32PTH1 TC/DSC), a solar shield shall be used to provide protection against direct solar radiation.

(continued)

4.4 Cask Transfer Controls (continued)

- This ambient temperature limit applies to all TRANSFER OPERATIONS of a loaded TC/DSC outside the FUEL BUILDING.
- Confirm what the ambient temperature is before transfer of the TC/DSC and every 2 hours when the loaded cask is exposed to direct insolation during TRANSFER OPERATIONS. If the ambient temperature before the transfer operation is greater than 100 °F or if the ambient temperature is expected to exceed the above limits provide an appropriate solar shield.

C. Verification of concrete storage pad parameters

Verify that the concrete storage pad parameters are consistent with the UFSAR analysis.

4.4.2 Trailer Shielding Drop onto OS197L TC

The DSC and the OS197L TC and the trailer shielding shall be inspected for damage and evaluated for further use after the accident drop of the trailer shielding onto the OS197L TC.

The lifting of outer top trailer shielding is restricted such that the bottommost part of the body of the outer top trailer shielding is less than 4 inches above the inner top trailer shielding.

4.5 HSM-H Configuration Changes

The use of HSM-H thermal performance methodology is allowed for evaluating HSM-H configuration changes except for changes to the HSM-H cavity height, cavity width, elevation and cross-sectional areas of the HSM-H air inlet/outlet vents, total outside height, length and width of HSM-H if these changes exceed 8% of their nominal design values shown on the approved CoC Amendment Number 8 drawings.

Table 1-1a
PWR Fuel Specifications for Fuel to be Stored in the Standardized NUHOMS®-24P DSC

PHYSICAL PARAMETERS	
Fuel	Only intact, unconsolidated PWR fuel assemblies (with or without BPRAs) with the following requirements:
Physical Parameters (without BPRAs)	
Maximum Assembly Weight	1682 lbs
Number of Assemblies per DSC	≤ 24 intact assemblies
Fuel Cladding	Zircaloy-clad fuel with no known or suspected gross cladding breaches
Physical Parameters (with BPRAs)	
Maximum Assembly + BPRA Weight	1682 lbs
Number of Assemblies per DSC	≤ 24 intact assemblies
Number of BPRAs per DSC	≤ 24 BPRAs
Fuel Cladding	Zircaloy-clad fuel with no known or suspected gross cladding breaches
NUCLEAR PARAMETERs	
Maximum Planar Average Initial Fuel Enrichment	≤ 4.0 wt. % U-235 Soluble boron requirements per Figure 1-1
BPRA Cooling Time (Minimum)	5 years for B&W Designs 10 years for Westinghouse Designs
Minimum Cooling Time	Per Table 1-2a (without BPRAs) or per Table 1-2c (with BPRAs)
Maximum Burnup	45 GWd/MTU
Minimum Assembly Average Initial Enrichment	2.0 wt.% U-235
Decay Heat (Fuel + BPRA)	≤ 24.0 kW/DSC and ≤ 1.0 kW/FA
ALTERNATE NUCLEAR PARAMETERS	
Maximum Planar Average Initial Fuel Enrichment	≤ 4.0 wt. % U-235 Soluble boron requirements per Figure 1-1
Assembly Average Burnup	≤ 40,000 MWd/MTU
Decay Heat (Fuel + BPRA)	≤ 1.0 kW per assembly
Neutron Fuel Source	≤ 2.23 x 10^8 n/sec per assy with spectrum bounded by that in Chapter 7 of UFSAR
Gamma (Fuel + BPRA) Source	≤ 7.45 x 10^{15} g/sec per assy with spectrum bounded by that in Chapter 7 of UFSAR

Table 1-1b
BWR Fuel Specifications for Fuel to be Stored in the Standardized NUHOMS®-52B DSC

PHYSICAL PARAMETERS	
Fuel	Only intact, unconsolidated BWR fuel assemblies with the following requirements:
Physical Parameters	
Maximum Assembly Weight	725 lbs
Number of Assemblies per DSC	≤ 52 intact channeled assemblies
Fuel Cladding	Zircaloy-clad fuel with no known or suspected gross cladding breaches
NUCLEAR PARAMETERS	
Maximum Lattice Average Initial Enrichment	≤ 4.0 wt. % U-235
Minimum Cooling Time	Per Table 1-2b
Maximum Burnup	45 GWd/MTU
Minimum Assembly Average Initial Enrichment	2.0 wt.% U-235
Decay Heat	≤ 19.2 kW/DSC and ≤ 0.37 kW/FA
ALTERNATE NUCLEAR PARAMETERS	
Maximum Lattice Average Initial Enrichment	≤ 4.0 wt. % U-235
Assembly Average Burnup	≤ 35,000 MWd/MTU
Decay Heat	≤ 0.37 kW per assembly
Neutron Source	≤ 1.01 x 10^8 n/sec per assy with spectrum bounded by that in Chapter 7 of UFSAR
Gamma Source	≤ 2.63 x 10^{15} g/sec per assy with spectrum bounded by that in Chapter 7 of UFSAR

Table 1-1c
BWR Fuel Specifications for Fuel to be Stored in the
Standardized NUHOMS®-61BT DSC

PHYSICAL PARAMETERS	
Fuel Design	7x7, 8x8, 9x9, or 10x10 BWR fuel assemblies
Cladding Material	Zircaloy
Fuel Damage	Cladding damage in excess of pinhole leaks or hairline cracks is not authorized to be stored as “Intact BWR Fuel.”
Channels	Fuel may be stored with or without fuel channels.
Maximum Assembly Weight	705 lbs
RADIOLOGICAL PARAMETERS:(3) No interpolation of Radiological Parameters is permitted between Groups.	
Group 1	
Maximum Burnup	27,000 MWd/MTU
Minimum Cooling Time	5-years(2)
Maximum Lattice Average Initial Enrichment	See Minimum Boron Loading below.
Minimum Initial Assembly Average Enrichment	2.0 wt. % U-235
Maximum Initial Uranium Content	198 kg/assembly
Maximum Decay Heat	300 W/assembly(1)
Group 2	
Maximum Burnup	35,000 MWd/MTU
Minimum Cooling Time	8-years(2)
Maximum Lattice Average Initial Enrichment	See Minimum Boron Loading below.
Minimum Initial Assembly Average Enrichment	2.65 wt. % U-235
Maximum Initial Uranium Content	198 kg/assembly
Maximum Decay Heat	300 W/assembly(1)
Group 3	
Maximum Burnup	37,200 MWd/MTU
Minimum Cooling Time	6.5-years(2)
Maximum Lattice Average Initial Enrichment	See Minimum Boron Loading below.
Minimum Initial Assembly Average Enrichment	3.38 wt. % U-235
Maximum Initial Uranium Content	198 kg/assembly
Maximum Decay Heat	300 W/assembly(1)
Group 4	
Maximum Burnup	40,000 MWd/MTU
Minimum Cooling Time	10-years(2)
Maximum Lattice Average Initial Enrichment	See Minimum Boron Loading below.
Minimum Initial Assembly Average Enrichment	3.4 wt. % U-235
Maximum Initial Uranium Content	198 kg/assembly
Maximum Decay Heat	300 W/assembly(1)
MINIMUM BORON LOADING	
Maximum Lattice Average Enrichment (wt. % U-235)	Minimum B10 Content in Poison Plates (Basket Types(4))
4.4	Type C Basket
4.1	Type B Basket
3.7	Type A Basket
ALTERNATE RADIOLOGICAL PARAMETERS:	
Maximum Initial Enrichment:	See Minimum Boron Loading above
Maximum Decay Heat (excluding transfer in OS197L):	300 W/assembly(1)
Maximum Decay Heat for Transfer in OS197L	See Figure 1-29
Minimum Cooling Time	Per Table 1-2q. For transfer of a 61BT DSC in an OS197L TC, per Table 1-6a and Table 1-6b.
Maximum Burnup	40 GWd/MTU
Minimum Assembly Average Initial Enrichment	1.4 wt.% U-235

(1) For FANP9 9x9-2 fuel assemblies, the maximum decay heat is limited to 0.21 kW/assembly.
(2) For fuel assemblies containing BLEU fuel pellets, add 3.0 years additional cooling time to the minimum values shown in this table.
(3) When the OS197L TC is employed, apply the requirements of Table 1-6a, Table 1-6b and Figure 1-29.
(4) Basket Type is specified in Table 1-1k.

Table 1-1d
(Not Used)

Table 1-1e
PWR Fuel Specifications for Fuel to be Stored in the NUHOMS®-32PT DSC

PHYSICAL PARAMETERS:	
Fuel Assembly Class	Intact (including reconstituted) or damaged or failed B&W 15x15, WE 17x17, CE 15x15, WE 15x15, CE 14x14 and WE 14x14 class PWR assemblies. Damaged and/or failed fuel assemblies beyond the definitions contained below are not authorized for storage.
Reconstituted Fuel Assemblies	≤ 32 assemblies per DSC with up to 56 irradiated stainless steel rods per assembly or unlimited number of lower enrichment UO_2 rods per assembly.
Fuel Damage	Damaged PWR fuel assemblies are assemblies containing missing or partial fuel rods, fuel rods with known or suspected cladding defects greater than hairline cracks or pinhole leaks. The extent of damage in the fuel assembly, including non-cladding damage, is to be limited in such a way that a fuel assembly is able to be handled by normal means. Missing fuel rods are allowed. The extent of damage in the fuel rods is to be limited such that a fuel pellet is not able to pass through the damaged cladding during handling and retrievability is ensured following normal and off-normal conditions. Damaged fuel assemblies shall also contain top and bottom end fittings or nozzles or tie plates depending on the fuel type.
Failed Fuel	Failed fuel is defined as ruptured fuel rods, severed fuel rods, loose fuel pellets, or fuel assemblies that cannot be handled by normal means. Fuel assemblies may contain breached rods, grossly breached rods, and other defects such as missing or partial rods, missing grid spacers, or damaged spacers to the extent that the assembly cannot be handled by normal means. Fuel debris and fuel rods that have been removed from a fuel assembly and placed in a rod storage basket are also considered as failed fuel. Loose fuel debris, not contained in a rod storage basket must be placed in a failed fuel can for storage, provided the size of the debris is larger than the failed fuel can screen mesh opening and it is located at a position of at least 4" above the top of the bottom shield plug of the DSC. Fuel debris may be associated with any type of UO_2 fuel provided that the maximum uranium content and initial enrichment limits are met.

(continued)

Table 1-1e
PWR Fuel Specifications for Fuel to be Stored in the NUHOMS®-32PT DSC

Control Components (CCs)	• Up to 32 CCs are authorized for storage in the 32PT DSC. • Authorized CCs include Burnable Poison Rod Assemblies (BPRAs), Thimble Plug Assemblies (TPAs), Control Rod Assemblies (CRAs), Rod Cluster Control Assemblies (RCCAs), Axial Power Shaping Rod Assembly (APSRAs), Orifice Rod Assemblies (ORAs), Vibration Suppression Inserts (VSIs), Neutron Source Assemblies (NSAs) and Neutron Sources. Non-fuel hardware that are positioned within the fuel assembly after the fuel assembly is discharged from the core such as Guide Tube or Instrument Tube Tie Rods or Anchors, Guide Tube Inserts, BPRA Spacer Plates or devices that are positioned and operated within the fuel assembly during reactor operation such as those listed above are also considered as CCs. Design basis radiological characteristics for the CCs are listed in Table 1-1ee.
Maximum Assembly plus CC Weight	-1365 lbs for 32PT-S100 & 32PT-L100 System -1682 lbs for 32PT-S125 & 32PT-L125 System
Maximum Initial Uranium Content	475 kg/assembly
Number of Intact Assemblies	≤ 32
Number and Location of Damaged Assemblies	Maximum of 28 damaged fuel assemblies as shown in Figure 1-4b. Balance may be intact assemblies, empty slots, or dummy assemblies as specified in Figure 1-2, Figure 1-3, Figure 1-4, and Figure 1-4a. The DSC basket cells that store damaged fuel assemblies are provided with top and bottom end caps to ensure retrievability.
Number and Location of Failed Assemblies	Maximum of 8 failed fuel assemblies as shown in Figure 1-4b. Balance may be intact and/or damaged fuel assemblies, empty slots, or dummy assemblies as specified in Figure 1-3. Failed fuel assembly/fuel debris is loaded in an individual failed fuel can (FFC).
Fuel Cladding	Zirconium alloy clad fuel
Minimum Cooling Time (excluding transfer in OS197L)	All fuel per Table 1-3n and the 32PT columns of Table 1-3p. A complete set of fuel qualification tables is provided in the UFSAR, Tables M.2-5 through M.2-14f. Only heat loads ≤ 2.2 kW/FA are applicable. These fuel qualification tables are not incorporated by reference into the Technical Specifications. They are listed here for convenience.
Maximum Burnup (excluding transfer in OS197L)	62 GWd/MTU
Minimum Assembly Average Initial Enrichment (excluding transfer in OS197L)	0.2 wt.% U-235
Decay Heat (excluding transfer in OS197L)	DSC and fuel assembly decay heat limits as specified in Figure 1-2, Figure 1-3, Figure 1-4, and Figure 1-4a
Minimum Cooling Time for transfer in OS197L	Per Table 1-6d for 0.4 kW and Table 1-6c for 0.6 kW.
Maximum Burnup for transfer in OS197L	45 GWd/MTU
Minimum Assembly Average Initial Enrichment for transfer in OS197L	1.1 wt.% U-235
Decay Heat for transfer in OS197L	See Figure 1-30
Maximum Planar Average Initial Fuel Enrichment	Per Table 1-1g, Table 1-1g1, Table 1-1g2 and Table 1-1g3, as applicable.

Table 1-1f
(Not Used)

Table 1-1g
Maximum Planar Average Initial Enrichment and Required Number of PRAs and Minimum Soluble Boron Loading (NUHOMS®-32PT DSC) – Intact Fuel

Assembly Class	Soluble Boron Loading (ppm)	No PRAs (Type A)		4 PRAs (Type B)	8 PRAs (Type C)	16 PRAs (Type D)
		Poison Plate Configuration		Poison Plate Configuration	Poison Plate Configuration	Poison Plate Configuration
		16	24	24	24	24
WE 17x17 Fuel Assembly (with and without CC)	2500	3.40	3.40	4.00	4.50	5.00
B&W 15x15 Mark B Fuel Assembly (with and without CC)	2500	3.30	3.30	3.90	NE	5.00
WE 15x15 Fuel Assembly (without CC)	2500	3.40	3.40	4.00	4.60	5.00
WE 15x15 Fuel Assembly (with CC)	2500	3.40	3.40	4.00	4.55	5.00
CE 14x14 Fuel Assembly (without CC)	1800	3.35	3.50	4.00	4.35	NE
	2000	3.50	3.70	4.20	4.55	NE
	2100	3.60	3.80	4.30	4.70	NE
	2200	3.70	3.90	4.40	4.80	NE
	2300	3.75	4.00	4.50	4.90	NE
	2400	3.80	4.05	4.60	5.00	NE
	2500	3.90	4.15	4.70	5.00	NE
CE 14x14 Fuel Assembly (with CC)	1800	3.30	3.45	3.90	4.25	NE
	2000	3.45	3.65	4.10	4.50	NE
	2100	3.55	3.75	4.20	4.60	NE
	2200	3.60	3.80	4.30	4.70	NE
	2300	3.65	3.90	4.40	4.80	NE
	2400	3.80	4.00	4.50	4.90	NE
	2500	3.90	4.05	4.60	5.00	NE
WE 14x14 Fuel Assembly (with and without CC)	1800	3.55	3.75	4.40	NE	NE
	2000	3.75	3.90	4.60	NE	NE
	2100	3.80	4.00	4.75	NE	NE
	2200	3.90	4.10	4.85	NE	NE
	2300	4.00	4.20	5.00	NE	NE
	2400	4.10	4.30	5.00	NE	NE
	2500	4.15	4.40	5.00	NE	NE
CE 15x15 Fuel Assembly (CC not allowed)	1800	3.00	3.15	NE	NE	NE
	2000	3.15	3.30	NE	NE	NE
	2100	3.20	3.40	NE	NE	NE
	2200	3.30	3.50	NE	NE	NE
	2300	3.35	3.55	NE	NE	NE
	2400	3.40	3.60	NE	NE	NE
	2500	3.50	3.70	NE	NE	NE

NOTES:
PRAs = Poison Rod Assemblies. Figure 1-5, Figure 1-6 and Figure 1-7 provide the required PRA configurations.
PRAs are B_4C PRAs as specified in Table 1-1h.
CC = Control Components. CCs and PRAs cannot be loaded in the same fuel assembly
Type = Basket Types are specified in Table 1-1h.
NE = Not Evaluated

Table 1-1g1
Maximum Planar Average Initial Enrichment for Type A1 and A2 Basket and Minimum Soluble Boron Loading (NUHOMS®-32PT DSC) – Intact Fuel

Assembly Class and Type	Soluble Boron Loading (ppm)	No PRAs (Type A1 and A2) 24 Poison Plate Configuration Type A1 (0.015 g B10/cm^2)	Type A2 (0.020 g B10/cm^2)
WE 17x17 fuel assembly (without CC)	2500	4.05	4.20
	2800	4.30	4.50
WE 17x17 fuel assembly (with CC)	2500	4.00	4.15
	2800	4.25	4.45
B&W 15x15 Mark B fuel assembly (without CC)	2500	4.00	4.10
B&W 15x15 Mark B fuel assembly (with CC)	2500	3.90	4.10
WE 15x15 fuel assembly (without CC)	2500	4.10	4.20
WE 15x15 fuel assembly (with CC)	2500	4.10	4.20
CE 14x14 fuel assembly (without CC)	1800	3.95	4.10
	2100	4.30	4.45
	2300	4.50	4.70
	2500	4.70	4.90
CE 14x14 fuel assembly (with CC)	1800	3.80	3.95
	2100	4.10	4.25
	2300	4.30	4.50
	2500	4.50	4.70
WE 14x14 fuel assembly (without CC)	1800	4.20	4.20
	2100	4.55	4.60
	2300	4.80	5.00
	2500	5.00	5.00
WE 14x14 fuel assembly (with CC)	1800	4.20	4.35
	2100	4.60	4.75
	2300	4.80	5.00
	2500	5.00	5.00
CE 15x15 fuel assembly (CC not allowed)	1800	3.50	3.60
	2100	3.75	3.90
	2300	3.95	4.10
	2500	4.10	4.30
	2800	4.45	4.55

Assembly Class and Type	Soluble Boron Loading (ppm)	No PRA 32 Poison Plate Configuration Type A1-32	Type A2-32
WE 17x17 fuel assembly (without CC)	2500	4.45	4.65
	2800	4.75	5.00
WE 17x17 fuel assembly (with CC)	2500	4.40	4.60
	2800	4.70	4.90
CE 15x15 fuel assembly (CC not allowed)	2500	4.55	4.75
	2800	4.85	5.00

(continued)

Table 1-1g1
Maximum Planar Average Initial Enrichment for Type A1 and A2 Basket and Minimum Soluble Boron Loading (NUHOMS®-32PT DSC) – Intact Fuel

Assembly Class and Type	Soluble Boron Loading (ppm)	4 B_4C PRAs 24 Poison Plate Configuration	
		Type B1	Type B2
WE 17x17 fuel assembly (with or without CC)	2800	4.85	4.95
Assembly Class and Type	**Soluble Boron Loading (ppm)**	**4 AIC PRAs 24 Poison Plate Configuration**	
		Type B1-r	**Type B2-r**
WE 17x17 fuel assembly (with or without CC)	2800	4.60	4.75
Assembly Class and Type	**Soluble Boron Loading (ppm)**	**8 B_4C PRAs 24 Poison Plate Configuration**	
		Type C1	
WE 17x17 fuel assembly (with or without CC)	2800	5.00	NE
Assembly Class and Type	**Soluble Boron Loading (ppm)**	**8 AIC PRAs 24 Poison Plate Configuration**	
		Type C1-r	**Type C2-r**
WE 17x17 fuel assembly (with or without CC)	2800	4.85	5.00

Notes:

PRAs can be B_4C PRAs or AIC PRAs as specified in Table 1-1h
CC = Control Components
Type = Basket Types are Specified in Table 1-1h
NE = Not Evaluated

Table 1-1g2
Maximum Planar Average Initial Enrichment for Type A1 and A2 Basket and Minimum Soluble Boron Loading (NUHOMS®-32PT DSC) – Damaged Fuel

Assembly Class and Type	Soluble Boron Loading (ppm)	28 Damaged Fuels 32 Poison Plate Configuration	
		Type A1	Type A2
WE 17x17 fuel assembly (with or without CC) CE 15x15 fuel assembly (CC not allowed)	2500	4.40	4.60
	2800	4.70	4.90
Assembly Class and Type	**Soluble Boron Loading (ppm)**	**28 Damaged Fuels 24 Poison Plate Configuration**	
		Type A1	**Type A2**
WE 17x17 fuel assembly (with or without CC) CE 15x15 fuel assembly (CC not allowed)	2500	4.00	4.20
	2800	4.30	4.45
WE 14x14 fuel assembly (with or without CC)	1800	3.80	3.95
	2100	4.10	4.25
	2300	4.30	4.45
	2500	4.50	4.65
CE 14x14 fuel assembly (with or without CC)	1800	3.70	3.85
	2100	4.00	4.15
	2300	4.20	4.35
	2500	4.40	4.50
	2600	4.45	4.65
Assembly Class and Type	**Soluble Boron Loading (ppm)**	**16 Damaged Fuels 24 Poison Plate Configuration**	
		Type A1	**Type A2**
CE 14x14 fuel assembly (with or without CC) WE 14x14 fuel assembly (with or without CC)	1800	3.80	3.95
	2100	4.10	4.25
	2300	4.30	4.45
	2500	4.50	4.70
	2600	4.60	4.80

Notes:

CC = Control Components
Type = Basket Types are Specified in Table 1-1h, Figure 1-5, Figure 1-6 and Figure 1-7 provide the required PRA configurations.
Damaged Fuel locations are shown in Figure 1-4b.
Maximum Planar Average Initial Enrichments are applicable to Intact or Damaged fuels.

Table 1-1g3
Maximum Planar Average Initial Enrichment for Type A1 and A2 Basket and Minimum Soluble Boron Loading (NUHOMS®-32PT DSC) –Failed Fuel

Assembly Class and Type	Soluble Boron Loading (ppm)	8 Failed Fuels 24 Poison Plate Configuration Type A1	8 Failed Fuels 24 Poison Plate Configuration Type A2
CE 15x15 fuel assembly (CC not allowed)	2500	4.10	4.25
	2800	4.40	4.55
WE 17x17 fuel assembly (with or without CC)	2500	4.00	4.15
	2800	4.30	4.45
WE 14x14 fuel assembly (with or without CC)	1800	4.15	4.30
	2100	4.50	4.70
	2300	4.75	4.95
	2500	4.95	5.00
CE 14x14 fuel assembly (with or without CC)	2600	4.70	4.90
Assembly Class and Type	**Soluble Boron Loading (ppm)**	**8 Failed Fuels 32 Poison Plate Configuration Type A1-32**	**8 Failed Fuels 32 Poison Plate Configuration Type A2-32**
CE 15x15 fuel assembly (CC not allowed)	2500	4.50	4.70
	2800	4.80	5.00
WE 17x17 fuel assembly (with or without CC)	2500	4.40	4.60
	2800	4.65	4.90

Notes:

CC = Control Components
Type = Basket Types are Specified in Table 1-1h
Damaged Fuel locations are shown in Figure 1-4b

Maximum Planar Average Initial Enrichments are applicable to Intact or Damaged or Failed fuels.

When Intact, Damaged, or Failed fuel are loaded as specified in Figure 1-4b, the lowest enrichment shown in Table 1-1g1, Table 1-1g2 and Table 1-1g3, considering the same poison plate configuration and soluble boron loading, is applicable to all loaded fuel.

Table 1-1h
Specification for the NUHOMS®-32PT Poison Plates and PRAs

NUHOMS®-32PT DSC Basket Type	Number of B_4C PRAs (1)(2)	Minimum B-10 Areal Density, gm/cm^2
A	0	0.0070
A1, A1-32	0	0.0150
A2, A2-32	0	0.0200
B	4	0.0070
B1	4	0.0150
B2	4	0.0200
C	8	0.0070
C1	8	0.0150
D	16	0.0070
NUHOMS®-32PT DSC Basket Type	**Number of AIC PRAs (1)(3)**	**Minimum B-10 Areal Density, gm/cm^2**
B1-r	4	0.0150
B2-r	4	0.0200
C1-r	8	0.0150
C2-r	8	0.0200

Notes:

(1) Figure 1-5, Figure 1-6 and Figure 1-7 provide the required PRA configurations

(2) PRAs with Boron Carbide absorber are specified as B4C PRAs. Minimum B4C content per absorber rod is 0.79 grams/cm

(3) PRAs with Silver-Indium-Cadmium absorber are specified as AIC PRAs. Minimum Silver content per absorber rod is 2.60 g/cm

Table 1-1i
PWR Fuel Specifications for Fuel to be Stored in the Standardized NUHOMS®-24PHB DSC

PHYSICAL PARAMETERS	
Fuel Class	Intact or damaged, unconsolidated B&W 15x15 (with or without CCs), intact WE 17x17, intact WE 15x15, intact CE 14x14 and intact WE 14x14 Class PWR fuel assemblies (all without CCs) or equivalent reload fuel manufactured by other vendor, with the following requirements: Damaged fuel assemblies beyond the definition contained below are not authorized for storage.
Maximum Number of Irradiated Stainless Steel Rods in Reconstituted Assemblies per DSC	40
Maximum Number of Irradiated Stainless Steel Rods per Reconstituted Assembly	10
Maximum Number of Reconstituted Assemblies per DSC with Low Enriched Uranium Oxide Rods	24
Fuel Damage	Damaged PWR fuel assemblies are assemblies containing missing or partial fuel rods, fuel rods with known or suspected cladding defects greater than hairline cracks or pinhole leaks. The extent of damage in the fuel assembly, including non-cladding damage, is to be limited such that a fuel assembly is able to be handled by normal means. Missing fuel rods are allowed. The extent of damage in the fuel rods is to be limited such that a fuel pellet is not able to pass through the damaged cladding during handling and retrievability is ensured following normal and off-normal conditions. Damaged fuel assemblies shall also contain top and bottom end fittings or nozzles or tie plates depending on the fuel type.
Control Components	• Up to 24 CCs are authorized for storage in 24PHBL DSCs only. • Authorized CCs include Burnable Poison Rod Assemblies (BPRAs), Thimble Plug Assemblies (TPAs), Control Rod Assemblies (CRAs), Rod Cluster Control Assemblies (RCCAs), Axial Power Shaping Rod Assemblies (APSRAs), Orifice Rod Assemblies (ORAs), Vibration Suppression Inserts (VSIs), Neutron Source Assemblies (NSAs), and Neutron Sources. Non-fuel hardware that are positioned within the fuel assembly after the fuel assembly is discharged from the core such as Guide Tube or Instrument Tube Tie Rods or Anchors, Guide Tube Inserts, BPRA Spacer Plates or devices that are positioned and operated within the fuel assembly during reactor operation such as those listed above are also considered as CCs. • Design basis radiological characteristics for the CCs are listed in Table 1-1n(1).

(continued)

Table 1-1i
PWR Fuel Specifications for Fuel to be Stored in the
Standardized NUHOMS®-24PHB DSC

Fuel Cladding	Zirconium alloy clad fuel
Number of Intact Assemblies	≤ 24
Number and Location of Damaged Assemblies	Up to 4 damaged fuel assemblies. Balance may be intact fuel assemblies or empty slots depending on the specific heat load zone configuration. Damaged fuel assemblies are to be placed in locations as shown in Figure 1-8 or Figure 1-9. The basket cells which store damaged fuel assemblies are provided with top and bottom end caps.
Maximum Assembly plus CC Weight	1682 lbs.
Nuclear Parameters	
Maximum Planar Average Initial Enrichment	Per Figure 1-10 or Figure 1-10a
Minimum Boron Loading	Per Figure 1-10 or Figure 1-10a
Maximum Initial Uranium loading per assembly	0.490 MTU
Allowable loading configurations for each 24PHB DSC	As specified in Figure 1-8 or Figure 1-9
Minimum Cooling Time for CCs	5 years
Total Decay Heat per DSC	24 kW
Decay Heat Limits for Zone 1, 2 and 3 Fuel	As specified in Figure 1-8 and Figure 1-9
Minimum Cooling Time	All fuel per Table 1-2p. Additional fuel qualification tables are included in UFSAR, Tables N.2-3 and N.2-4. These fuel qualification tables are not included in the Technical Specifications by reference and are listed here for convenience.
Maximum Burnup	55 GWd/MTU
Minimum Assembly Average Initial Enrichment	2.0 wt.% U-235

(1) Radiological characteristics for CCs listed in this table for 24PTH DSC are also applicable to 24PHB DSC.

Table 1-1j
BWR Fuel Specification of Damaged Fuel to be Stored in the Standardized NUHOMS®-61BT DSC

PHYSICAL PARAMETERS:	
Fuel Design	7x7, 8x8 BWR damaged fuel assemblies. Damaged fuel assemblies beyond the definition contained below are not authorized for storage.
Cladding Material	Zircaloy
Fuel Damage	Damaged BWR fuel assemblies are fuel assemblies containing fuel rods with known or suspected cladding defects greater than hairline cracks or pinhole leaks. The extent of damage in the fuel assembly, including non-cladding damage, is to be limited such that the fuel assembly is able to be handled by normal means. The extent of damage in the fuel rods is to be limited such that a fuel pellet is not able to pass through the damaged cladding opening during handling and retrievability is ensured following normal and off-normal conditions. Damaged fuel shall be stored with Top and Bottom Caps. Damaged fuel may only be stored in the 2x2 compartments of the "Type C" NUHOMS®-61BT Canister described in Table 1-1k.
Channels	Fuel may be stored with or without fuel channels.
Maximum Assembly Weight	705 lbs
RADIOLOGICAL PARAMETERS:(2)	No interpolation of Radiological Parameters is permitted between groups.
Group 1 Maximum Burnup	27,000 MWd/MTU
Minimum Cooling Time	5-years(1)
Maximum Initial Lattice Average Enrichment	4.0 wt. % U-235
Maximum Pellet Enrichment	4.4 wt. % U-235
Minimum Initial Assembly Average Enrichment	2.0 wt. % U-235
Maximum Initial Uranium Content	198 kg/assembly
Maximum Decay Heat	300 W/assembly
Group 2 Maximum Burnup	35,000 MWd/MTU
Minimum Cooling Time	8-years(1)
Maximum Initial Lattice Average Enrichment	4.0 wt. % U-235
Maximum Pellet Enrichment	4.4 wt. % U-235
Minimum Initial Assembly Average Enrichment	2.65 wt. % U-235
Maximum Initial Uranium Content	198 kg/assembly
Maximum Decay Heat	300 W/assembly
Group 3 Maximum Burnup	37,200 MWd/MTU
Minimum Cooling Time	6.5-years(1)
Maximum Initial Lattice Average Enrichment	4.0 wt. % U-235
Maximum Pellet Enrichment	4.4 wt. % U-235
Minimum Initial Assembly Average Enrichment	3.38 wt. % U-235
Maximum Initial Uranium Content	198 kg/assembly
Maximum Decay Heat	300 W/assembly

(continued)

Table 1-1j
BWR Fuel Specification of Damaged Fuel to be Stored in the Standardized NUHOMS®-61BT DSC

RADIOLOGICAL PARAMETERS:[(2)]	
Group 4	
Maximum Burnup	40,000 MWd/MTU
Minimum Cooling Time	10-years[(1)]
Maximum Initial Lattice Average Enrichment	4.0 wt. % U-235
Maximum Pellet Enrichment	4.4 wt. % U-235
Minimum Initial Assembly Average Enrichment	3.4 wt. % U-235
Maximum Initial Uranium Content	198 kg/assembly
Maximum Decay Heat	300 W/assembly
ALTERNATE RADIOLOGICAL PARAMETERS:	
Maximum Initial Lattice Average Enrichment	4.0 wt. % U-235
Maximum Pellet Enrichment	4.4 wt. % U-235
Maximum Initial Uranium Content	198 kg/assembly
Maximum Decay Heat (excluding transfer in OS197L)	300 W/assembly
Maximum Decay Heat for Transfer in OS197L	See Figure 1-29
Minimum Cooling Time	Per Table 1-2q. For transfer of a 61BT DSC in an OS197L TC, per Tables 1-6a and 1-6b.
Maximum Burnup	40 GWd/MTU
Minimum Assembly Average Initial Enrichment	1.4 wt.% U-235

(1) For fuel assemblies containing BLEU fuel pellets, add 3.0 years additional cooling time to the minimum values shown in this table.

(2) When the OS197L TC is employed, apply the requirements of Table 1-6a, Table 1-6b and Figure 1-29.

Table 1-1k
B10 Specification for the NUHOMS®-61BT Poison Plates

NUHOMS®-61BT DSC Basket Type	Minimum B10 Areal Density (grams/cm^2)	
	Borated Aluminum or MMC	Boral®
A	0.021	0.025
B	0.032	0.038
C	0.040	0.048

Table 1-1l
PWR Fuel Specification for the Fuel to be Stored in the NUHOMS®-24PTH DSC

PHYSICAL PARAMETERS:	
Fuel Class	Intact or damaged or failed unconsolidated B&W 15x15, WE 17x17, CE 15x15, WE 15x15, CE 14x14 and WE 14x14 class PWR assemblies (with or without control components). Damaged and/or failed fuel assemblies beyond the definitions contained below are not authorized for storage.
Fuel Damage	Damaged PWR fuel assemblies are assemblies containing missing or partial fuel rods, fuel rods with known or suspected cladding defects greater than hairline cracks or pinhole leaks. The extent of damage in the fuel assembly, including non-cladding damage, is to be limited such that the fuel assembly is able to be handled by normal means. Missing fuel rods are allowed. The extent of damage in the fuel rods is to be limited such that a fuel pellet is not able to pass through the damaged cladding during handling and retrievability is ensured following normal and off-normal conditions. Damaged fuel assemblies shall also contain top and bottom end fittings or nozzles or tie plates depending on the fuel type.
Failed Fuel	Failed fuel is defined as ruptured fuel rods, severed fuel rods, loose fuel pellets, or fuel assemblies that cannot be handled by normal means. Fuel assemblies may contain breached rods, grossly breached rods, and other defects such as missing or partial rods, missing grid spacers, or damaged spacers to the extent that the assembly cannot be handled by normal means. Fuel debris and fuel rods that have been removed from a fuel assembly and placed in a rod storage basket are also considered as failed fuel. Loose fuel debris, not contained in a rod storage basket must be placed in a failed fuel can for storage, provided the size of the debris is larger than the failed fuel can screen mesh opening and it is located at a position of at least 10” above the top of the bottom shield plug of the DSC. Fuel debris may be associated with any type of UO_2 fuel provided that the maximum uranium content and initial enrichment limits are met.
Partial Length Shield Assemblies (PLSAs)	WE 15x15 class PLSAs which have only ever been irradiated in peripheral core locations with following characteristics are authorized: • Maximum burnup, 40 GWd/MTU • Minimum cooling time, 6.5 years • Maximum decay heat, 900 watts

(continued)

Table 1-1l
PWR Fuel Specification for the Fuel to be Stored in the NUHOMS®-24PTH DSC

Reconstituted Fuel Assemblies: • Maximum Number of Irradiated Stainless Steel Rods in Reconstituted Assemblies per DSC • Maximum Number of Irradiated Stainless Steel Rods per Reconstituted Fuel Assembly • Maximum Number of Reconstituted Assemblies per DSC with unlimited number of low enriched UO_2 rods and/or Unirradiated Stainless Steel Rods and/or Zr Rods or Zr Pellets	 40 10 24
Control Components (CCs)	• Up to 24 CCs are authorized for storage in 24PTH-L, 24PTH-S, and 24PTH-S-LC DSCs only. • Authorized CCs include Burnable Poison Rod Assemblies (BPRAs), Thimble Plug Assemblies (TPAs), Control Rod Assemblies (CRAs), Rod Cluster Control Assemblies (RCCAs), Axial Power Shaping Assembly Rods (APSRAs), Orifice Rod Assemblies (ORAs), Vibration Suppression Inserts (VSIs), Neutron Source Assemblies (NSAs), and Neutron Sources. Non-fuel hardware that are positioned within the fuel assembly after the fuel assembly is discharged from the core such as Guide Tube or Instrument Tube Tie Rods or Anchors, Guide Tube Inserts, BPRA Spacer Plates or devices that are positioned and operated within the fuel assembly during reactor operation such as those listed above are also considered as CCs. • Design basis radiological characteristics for the CCs are listed in Table 1-1n.
Number of Intact Assemblies	≤ 24
Number and Location of Damaged Assemblies	Maximum of 12 damaged fuel assemblies. Balance may be intact fuel assemblies, empty slots, or dummy assemblies depending on the specific heat load zoning configuration. Damaged fuel assemblies are to be placed in Location A and/or B as shown in Figure 1-16. The DSC basket cells which store damaged fuel assemblies are provided with top and bottom end caps to assure retrievability.
Number and Location of Failed Assemblies	Up to 8 failed fuel assemblies. Balance may be intact and/or damaged fuel assemblies, empty slots, or dummy assemblies depending on the specific heat load zoning configuration. Failed fuel assemblies are to be placed in Location A as shown in Figure 1-16. Failed fuel assembly/fuel debris is to be encapsulated in an individual failed fuel can (FFC) provided with a welded bottom closure and a removable top closure.
Maximum Assembly plus CC Weight	*1682 lbs for Type 1 and 2 Basket* *1715 lbs for Type 3 Basket*
Maximum Initial Uranium Content	492 kg/assembly
Fuel Cladding	Zirconium alloy clad fuel

(continued)

Table 1-1l
PWR Fuel Specification for the Fuel to be Stored in the NUHOMS®-24PTH DSC

THERMAL/RADIOLOGICAL PARAMETERS: Maximum Planar Average Initial Fuel Enrichment	Per Table 1-1p or Table 1-1q or Table 1-1q1
Decay Heat	Type 1 Basket: ≤ 40.8 kW for 24PTH-S and 24PTH-L DSCs with decay heat limits for Zones 1, 2, 3, 4, and 6 as specified in Figure 1-11 or Figure 1-12 or Figure 1-13 or Figure 1-14 or Figure 1-15a.
	Type 2 Basket: Same as Type 1 Basket except ≤ 31.2 kW/DSC and ≤ 1.3 kW/fuel assembly for 24PTH-S and 24PTH-L DSCs. ≤ 24.0 kW for 24PTH-S-LC DSC with decay heat limits as specified in Figure 1-15.
	Type 3 Basket: *≤ 40.8 kW for 24PTH-S and 24PTH-L DSCs with decay heat limits for Zones 1, 2, 3, 4, and 6 as specified in Figure 1-11 or Figure 1-12 or Figure 1-13 or Figure 1-14 or Figure 1-15a.* *≤ 24.0 kW for 24PTH-S-LC DSC with decay heat limits as specified in Figure 1-15.*
Minimum Boron Loading	Per Table 1-1p or Table 1-1q or Table 1-1q1
Minimum Cooling Time	All fuel in the 24PTH-S/-L DSC per Table 1-3o and Table 1-3p (24PTH-S/-L DSC columns for 2.5 kW/FA). In addition, the peripheral region of HLZC 2 and 3 (Figure 1-12 and Figure 1-13) per Table 1-3m and Table 1-3p (24PTH-S/-L DSC columns for 2.0 kW/FA). The peripheral region is illustrated in Figure 1-16a. All fuel in the 24PTH-S-LC per Table 1-3k and Table 1-3p (24PTH-S-LC DSC columns). A complete set of fuel qualification tables is provided in the UFSAR, Tables M.2-5 through M.2-14f. Only heat loads ≤ 1.5 kW/FA are applicable to the 24PTH-S-LC DSC. These fuel qualification tables are not incorporated by reference into the Technical Specifications. They are listed here for convenience.
Maximum Burnup	62 GWd/MTU
Minimum Assembly Average Initial Enrichment	0.2 wt.% U-235

Table 1-1m
(Not Used)

Table 1-1n
Radiological Characteristics for Control Components Stored in the NUHOMS® -24PTH DSC and 24PHB DSC

Parameter	BPRAs, NSAs, CRAs, RCCAs, VSIs, Neutron Sources and APSRAs	TPAs and ORAs
Maximum Gamma Source (γ/sec/DSC)	9.3E+14	9.8E+13

Note: NSAs and Neutron Sources shall only be stored in the interior compartments of the basket. Interior compartments are those compartments that are completely surrounded by other compartments, including the corners. There are four interior compartments in the 24PTH DSC.

Table 1-1o
(Not Used)

Table 1-1p
Maximum Planar Average Initial Enrichment v/s Neutron Poison Requirements for the NUHOMS® -24PTH DSC (Intact Fuel)

Fuel Assembly Class	Maximum Planar Average Initial Enrichment (wt. % U-235) as a Function of Soluble Boron Concentration and Basket Type (Fixed Poison Loading)			
	Minimum Soluble Boron (ppm)	Basket Type[(3)]		
		1A or 2A	1B or 2B	1C, *2C, or 3D*
CE 14x14 [(1)]	2100	4.50	4.90	5.00
	2200	4.60	5.00	5.00
	2300	4.70	5.00	5.00
	2400	4.80	5.00	5.00
	2500	4.90	5.00	5.00
	2600	5.00	5.00	5.00
WE 14x14 [(2)]	2100	4.80	5.00	5.00
	2200	4.90	5.00	5.00
	2300	5.00	5.00	5.00
CE 15x15 [(2)]	2100	3.90	4.20	4.60
	2200	4.00	4.40	4.70
	2300	4.10	4.50	4.80
	2400	4.20	4.60	4.90
	2500	4.30	4.70	5.00
	2600	4.40	4.80	5.00
	2700	4.50	4.90	5.00
	2800	4.50	5.00	5.00
	2900	4.60	5.00	5.00
	3000	4.70	5.00	5.00
WE 15x15 [(2)]	2100	3.80	4.20	4.60
	2200	3.90	4.30	4.70
	2300	4.00	4.40	4.80
	2400	4.10	4.50	4.90
	2500	4.20	4.60	5.00
	2600	4.30	4.70	5.00
	2700	4.30	4.80	5.00
	2800	4.40	4.90	5.00
	2900	4.50	5.00	5.00
	3000	4.60	5.00	5.00

(continued)

Table 1-1p
Maximum Planar Average Initial Enrichment v/s Neutron Poison Requirements for the NUHOMS® -24PTH DSC (Intact Fuel)

Fuel Assembly Class	**Maximum Planar Average Initial Enrichment (wt. % U-235) as a Function of Soluble Boron Concentration and Basket Type (Fixed Poison Loading)**			
	Minimum Soluble Boron (ppm)	**Basket Type(3)**		
		1A or 2A	**1B or 2B**	**1C, 2C*, or 3D***
WE 17x17(2)	2100	3.80	4.10	4.50
	2200	3.90	4.20	4.60
	2300	4.00	4.30	4.70
	2400	4.00	4.40	4.80
	2500	4.10	4.50	4.90
	2600	4.20	4.60	5.00
	2700	4.30	4.70	5.00
	2800	4.40	4.80	5.00
	2900	4.50	4.90	5.00
	3000	4.60	5.00	5.00
B&W 15x15(2)	2100	3.60	4.00	4.30
	2200	3.70	4.10	4.50
	2300	3.80	4.20	4.60
	2400	3.90	4.30	4.70
	2500	4.00	4.40	4.80
	2600	4.10	4.50	4.90
	2700	4.20	4.60	5.00
	2800	4.20	4.70	5.00
	2900	4.30	4.80	5.00
	3000	4.40	4.90	5.00

Notes:

(1) When CCs that extend into the active fuel region are stored, the maximum planar average initial enrichment shall be reduced by 0.2 wt. %.
(2) When CCs that extend into the active fuel region are stored, the maximum planar average initial enrichment shall be reduced by 0.05 wt. % or the soluble boron concentration shall be increased by 50 ppm.
(3) The fixed poison loading requirements as a function of Basket Type are specified in Table 1-1r.

Table 1-1q
Maximum Planar Average Initial Enrichment v/s Neutron Poison Requirements for the NUHOMS®-24PTH DSC (Damaged Fuel)

Assembly Class	Maximum Number of Damaged Fuel Assemblies per DSC	Maximum Planar Average Initial Enrichment (wt. % U-235) for Damaged Fuel Assemblies(3) as a Function of Soluble Boron Concentration and Basket Type (Fixed Poison Loading)			
		Minimum Soluble Boron (ppm)	Basket Type(4)		
			1A or 2A	1B or 2B	1C*, 2C, or 3D*
CE 14x14(1)	12	2150	NE	4.70	NE
	12	2450	4.50	5.00	5.00
WE 14x14(2)	12	2150	4.50	5.00	5.00
CE 15x15(2)	12	2150	NE	NE	4.50
	12	2550	NE	NE	5.00
WE 15x15(2)	12	2250	NE	NE	4.50
	12	2650	NE	NE	5.00
B&W 15x15(2)	12	2350	NE	NE	4.50
	12	2800	NE	NE	5.00
WE 17x17(2)	12	2250	NE	NE	4.50
	12	2650	NE	NE	5.00

Notes:

(1) When CCs that extend into the active fuel region are stored, the maximum planar average initial enrichment shall be reduced by 0.2 wt. %.
(2) When CCs that extend into the active fuel region are stored, the maximum planar average initial enrichment shall be reduced by 0.05 wt. % or the soluble boron concentration shall be increased by 50 ppm.
(3) Enrichment limits are applicable when more than 8 damaged fuel assemblies are loaded.
(4) The fixed poison loading requirements as a function of Basket Type are specified in Table 1-1r.

NE = Not Evaluated.

Table 1-1q1
Maximum Planar Average Initial Enrichment v/s Neutron Poison Requirements for the NUHOMS®-24PTH DSC (up to 8 Damaged/Failed Fuel)

Fuel Assembly Class	Maximum Planar Average Initial Enrichment (wt. % U-235) for Loading up to Eight Damaged and/or Failed Fuel Assemblies[(3)] as a Function of Soluble Boron Concentration and Basket Type (Fixed Poison Loading)			
	Minimum Soluble Boron (ppm)	Basket Type[(4)]		
		1A or 2A	1B or 2B	1C*, 2C, or 3D*
CE 14x14[(2)]	2100	4.40	4.90	5.00
	2200	4.55	5.00	5.00
	2300	4.60	5.00	5.00
	2400	4.60	5.00	5.00
	2500	4.90	5.00	5.00
	2600	5.00	5.00	5.00
WE 14x14[(1)]	2100	4.75	5.00	5.00
	2200	4.90	5.00	5.00
	2300	4.90	5.00	5.00
	2400	5.00	5.00	5.00
CE 15x15[(1)]	2100	3.90	4.20	4.60
	2200	4.00	4.40	4.70
	2300	4.10	4.50	4.80
	2400	4.20	4.60	4.90
	2500	4.30	4.70	5.00
	2600	4.40	4.80	5.00
	2700	4.50	4.90	5.00
	2800	4.50	5.00	5.00
	2900	4.60	5.00	5.00
	3000	4.70	5.00	5.00
WE 15x15[(1)]	2100	3.80	4.20	4.60
	2200	3.90	4.25	4.70
	2300	4.00	4.40	4.80
	2400	4.10	4.50	4.90
	2500	4.20	4.60	5.00
	2600	4.30	4.70	5.00
	2700	4.30	4.80	5.00
	2800	4.40	4.90	5.00
	2900	4.50	5.00	5.00
	3000	4.60	5.00	5.00

(continued)

Table 1-1q1
Maximum Planar Average Initial Enrichment v/s Neutron Poison Requirements for the NUHOMS®-24PTH DSC (up to 8 Damaged/Failed Fuel)

Fuel Assembly Class	Maximum Planar Average Initial Enrichment (wt. % U-235) damaged fuel assemblies[3] as a Function of Soluble Boron Concentration and Basket Type (Fixed Poison Loading)			
	Minimum Soluble Boron (ppm)	Basket Type[4]		
		1A or 2A	1B or 2B	1C, 2C*, or 3D*
WE 17x17[1]	2100	3.80	4.10	4.50
	2200	3.90	4.20	4.60
	2300	4.00	4.30	4.70
	2400	4.00	4.40	4.80
	2500	4.10	4.50	4.90
	2600	4.20	4.60	5.00
	2700	4.30	4.70	5.00
	2800	4.40	4.80	5.00
	2900	4.50	4.90	5.00
	3000	4.60	5.00	5.00
B&W 15x15[1]	2100	3.60	4.00	4.20
	2200	3.70	4.10	4.20
	2300	3.80	4.20	4.50
	2400	3.90	4.30	4.70
	2500	4.00	4.40	4.70
	2600	4.10	4.40	4.90
	2700	4.20	4.50	5.00
	2800	4.20	4.70	5.00
	2900	4.30	4.70	5.00
	3000	4.40	4.70	5.00

(1) When CCs that extend into the active fuel region are stored, the maximum planar average initial enrichment shall be reduced by 0.05 wt. % or the soluble boron concentration shall increased by 50 ppm.
(2) When CCs that extend into the active fuel region are stored, the maximum planar average initial enrichment shall be reduced by 0.2 wt. %.
(3) Enrichment limits are applicable when up to 8 damaged and/or failed fuel assemblies are loaded.
(4) The fixed poison loading requirements as a function of basket type are specified inTable 1-1r.

Table 1-1r
B10 Specification for the NUHOMS®-24PTH Poison Plates

NUHOMS®-24PTH DSC Basket Type	Minimum B10 Areal Density, (grams/cm^2)	
	Borated Aluminum or MMC	Boral®
1A or 2A	0.007	0.009
1B or 2B	0.015	0.019
1C or 2C	0.032	0.040
3D	*0.035*(1)	*N/A*

Note:

1) *Only MMC poison is available for Basket Type 3D.*

Table 1-1s
(Deleted)

Table 1-1t
BWR Fuel Specification for the Fuel to be Stored in the NUHOMS®-61BTH DSC

PHYSICAL PARAMETERS: Fuel Class	Intact or damaged or failed 7x7, 8x8, 9x9, 10x10 or 11x11 BWR assemblies. Damaged and/or failed fuel assemblies beyond the definitions contained below are not authorized for storage.
Fuel Damage	Damaged BWR fuel assemblies are assemblies containing fuel rods with known or suspected cladding defects greater than hairline cracks or pinhole leaks. The extent of cladding damage in the fuel assembly, including non-cladding damage, is to be limited such that a fuel assembly needs to be handled by normal means. Missing fuel rods are allowed. The extent of damage in the fuel rods is to be limited such that a fuel pellet is not able to pass through the damaged cladding during handling and retrievability is ensured following normal and off-normal conditions. Damaged fuel assemblies shall also contain top and bottom end fittings or nozzles or tie plates depending on the fuel type.
Failed Fuel	Failed fuel is defined as ruptured fuel rods, severed fuel rods, loose fuel pellets, or fuel assemblies that cannot be handled by normal means. Failed fuel assemblies may contain breached rods, grossly breached rods, and other defects such as missing or partial rods, missing grid spacers, or damaged spacers to the extent that the assembly cannot be handled by normal means. Fuel debris and fuel rods that have been removed from a fuel assembly and placed in a rod storage basket are also considered as failed fuel. Loose fuel debris, not contained in a rod storage basket must be placed in a failed fuel can for storage, provided the size of the debris is larger than the failed fuel can screen mesh opening and it is located at a position of at least 10” above the top of the bottom shield plug of the DSC. Fuel debris may be associated with any type of UO_2 fuel provided that the maximum uranium content and initial enrichment limits are met.
RECONSTITUTED FUEL ASSEMBLIES: • Maximum Number of Irradiated Stainless Steel Rods in Reconstituted Assemblies per DSC • Maximum Number of Irradiated Stainless Steel Rods per Reconstituted Fuel Assembly • Maximum Number of Reconstituted Assemblies per DSC with unlimited number of low enriched UO_2 rods or Zr Rods or Zr Pellets or Unirradiated Stainless Steel Rods	40 10 61
Number of Intact Assemblies	≤ 61

(continued)

Table 1-1t
BWR Fuel Specification for the Fuel to be Stored in the NUHOMS®-61BTH DSC

Number and Location of Damaged Assemblies	Up to 61 damaged fuel assemblies, are authorized for storage in 61BTH DSC. If less than 61 damaged fuel assemblies are stored, balance may be intact or dummy assemblies. Damaged fuel assemblies are to be stored in accordance with Figure 1-25. The DSC basket cells that store damaged fuel assemblies are provided with top and bottom end caps to assure retrievability.
Number and Location of Failed Assemblies	Up to four failed fuel assemblies. Balance may be intact and/or damaged fuel assemblies, empty slots, or dummy assemblies depending on the specific heat load zoning configuration. Failed fuel assemblies are to be placed in Location A as shown in Figure 1-25. Failed fuel assembly/fuel debris is to be encapsulated in an individual FFC provided with a welded bottom closure and a removable top closure.
Channels	Fuel may be stored with or without channels, channel fasteners, or finger springs.
Maximum Initial Uranium Content	198 kg/assembly
Fuel Cladding	Zirconium alloy clad fuel
Maximum Assembly Weight with Channels	705 lbs
THERMAL/RADIOLOGICAL PARAMETERS: Allowable Heat Load Zoning Configurations for each Type 1 61BTH DSC Allowable Heat Load Zoning Configurations for each Type 2 61BTH DSC:	Per Figure 1-17 or Figure 1-18 or Figure 1-19 or Figure 1-20 or Figure 1-25a. Per Figure 1-17 or Figure 1-18 or Figure 1-19 or Figure 1-20 or Figure 1-21 or Figure 1-22 or Figure 1-23 or Figure 1- 24 or Figure 1-25a or Figure 1-25b or Figure 1-25d or Figure 1-25e or Figure 1-25f.
Minimum Cooling Time	*Standardized HSM: All fuel per Table 1-4e* *HSM-H: All fuel per Table 1-4f*
Maximum Burnup	62 GWd/MTU
Minimum Assembly Average Initial Enrichment	0.5 wt.% U-235
Maximum Lattice Average Initial Enrichment	Per Table 1-1v or Table 1-1w or Table 1-1w1 or Table 1-1x
Maximum Pellet Enrichment	5.0 wt. % U-235
Maximum Decay Heat Limits for Zones 1, 2, 3, 4, 5 and 6 Fuel	Per Figure 1-17 or Figure 1-18 or Figure 1-19 or Figure 1-20 or Figure 1-21 or Figure 1-22 or Figure 1-23 or Figure 1-24 or Figure 1-25a or Figure 1-25b *or Figure 1-25d, or Figure 1-25e or Figure 1-25f. Failed fuel as stored per Figure 1-25 is limited to 0.54kW*
Decay Heat per DSC	≤ 22.0 kW for Type 1 DSC ≤ 31.2 kW for Type 2 DSC
Minimum B-10 Concentration in Poison Plates	Per Table 1-1v or Table 1-1w or Table 1-1w1 or Table 1-1x
Number and location of UNANALYZED FUEL (UF)	*≤ 4 UF in the peripheral locations for both the Type 1 and Type 2 DSC. A minimum of five non-UF shall circumferentially separate UF within the peripheral locations. No limitation for UF in the inner locations. The peripheral and inner locations are defined in Figure 1-25c.*

Table 1-1u
(Not Used)

Table 1-1v
Maximum Fuel Assembly Lattice Average Initial Enrichment v/s Minimum B-10 Requirements for the NUHOMS®-61BTH DSC Poison Plates (Intact Fuel)

61BTH DSC Type	Basket Type	Maximum Lattice Average Enrichment (wt. % U-235)(1)	Minimum B-10 Areal Density, (grams/cm²)	
			Borated Aluminum/MMC	Boral®
1	A	3.7	0.021	0.025
	B	4.1	0.032	0.038
	C	4.4	0.040	0.048
	D	4.6	0.048	0.058
	E	4.8	0.055	0.066
	F	5.0	0.062	0.075
2	A	3.7	0.022	0.027
	B	4.1	0.032	0.038
	C	4.4	0.042	0.050
	D	4.6	0.048	0.058
	E	4.8	0.055	0.066
	F	5.0(1)	0.062	0.075

Note:

1) For ATRIUM 11 fuel assemblies, the U-235 wt. % enrichment is reduced by 0.55%. The ATRIUM 11 fuel assemblies are authorized for storage in the Type 2F DSC only.

Table 1-1w
Maximum Fuel Assembly Lattice Average Initial Enrichment v/s Minimum B-10 Requirements for the NUHOMS®-61BTH DSC Poison Plates (Damaged Fuel)

61BTH DSC Type	Basket Type	Maximum Lattice Average Enrichment (wt. % U-235)		Minimum B-10 Areal Density, (grams/cm^2)	
		Up to 4 Damaged Assemblies(1)	Five or More Damaged Assemblies(1) (16 Maximum)	Borated Aluminum/MMC	Boral®
1	A	3.7	2.80	0.021	0.025
	B	4.1	3.10	0.032	0.038
	C	4.4	3.20	0.040	0.048
	D	4.6	3.40	0.048	0.058
	E	4.8	3.50	0.055	0.066
	F	5.0	3.60	0.062	0.075
2	A	3.7	2.80	0.022	0.027
	B	4.1	3.10	0.032	0.038
	C	4.4	3.20	0.042	0.050
	D	4.6	3.40	0.048	0.058
	E	4.8	3.50	0.055	0.066
	F	5.0(2, 3)	3.60	0.062	0.075

Notes:

1) See Figure 1-25 for the location of damaged fuel assemblies within the 61BTH DSC.
2) ATRIUM 11 fuel assemblies are authorized for storage only in the Type 2F basket with a maximum of 4 damaged fuel assemblies.
3) For ATRIUM 11 fuel assemblies, the U-235 wt. % enrichment is reduced by 0.55%.

Table 1-1w1
BWR Fuel Assembly Initial Lattice Average Initial Enrichment v/s Minimum B-10 Requirements for the NUHOMS®-61BTH DSC Poison Plates (Failed and Damaged Fuel)

61BTH DSC Type	Basket Type	Maximum Lattice Average Enrichment (wt. % U-235)		Minimum B-10 Areal Density (grams/cm^2)	
		Up to 4 Failed Assemblies (Corner Locations)(1, 2)	Up to 4 Failed Assemblies (Corner Locations) and up to 12 Damaged Assemblies (Interior Locations)(1, 2)	Borated Aluminum/MMC	Boral®
2	A	3.7	2.8	0.022	0.027
	B	4.0	3.1	0.032	0.038
	C	4.4	3.2	0.042	0.050
	D	4.6	3.4	0.048	0.058
	E	4.8	3.4	0.055	0.066
	F	5.0	3.5	0.062	0.075

Notes:

1) See Figure 1-25 for the locations of the failed and damaged assemblies within the 61BTH DSC.
2) Failed ATRIUM 11 fuel assemblies are not authorized for storage in the 61BTH DSC.

Table 1-1x
BWR Fuel Assembly Initial Lattice Average Enrichments v/s Minimum B-10 Requirements for the NUHOMS® -61BTH DSC Poison Plates for > 16 Damaged Fuel Assemblies

61BTH DSC Type	Poison ID	Up to 57 Damaged Fuel at 3.30 wt. % U-235		Minimum B-10 Content (grams/cm2)		
		Remaining Four Intact Assemblies (1)	Remaining Four Damaged Assemblies (1)	Utilized in this Analysis	Specified for 90% Credit	Specified for 75% Credit
2	A	-	-	-	-	-
	B	-	-	-	-	-
	C	-	-	-	-	-
	D	5.00	4.20	0.043	0.048	0.058
	E	5.00	4.20	0.050	0.055	0.066
	F	5.00	4.20	0.056	0.062	0.075

Note 1: See Figure 1-25 for the locations of the damaged assemblies within the 61BTH DSC.

Table 1-1y
(Not Used)

Table 1-1z
(Not Used)

Table 1-1aa
PWR Fuel Specification for the Fuel to be Stored in the NUHOMS®-32PTH1 DSC

PHYSICAL PARAMETERS: Fuel Class	Intact or damaged or failed unconsolidated B&W 15x15, WE 17x17, CE 15x15, WE 15x15, CE 14x14, WE 14x14 and CE 16x16 class PWR assemblies (with or without CCs). Damaged and/or failed fuel assemblies beyond the definitions contained below are not authorized for storage.
Fuel Damage	Damaged PWR fuel assemblies are assemblies containing missing or partial fuel rods, fuel rods with known or suspected cladding defects greater than hairline cracks or pinhole leaks. The extent of damage in the fuel assembly, including non-cladding damage, is to be limited such that the fuel assembly will still be able to be handled by normal means. Missing fuel rods are allowed. The extent of damage is to be limited such that a fuel pellet is not able to pass through the damaged cladding during handling and retrievability is ensured following normal and off-normal conditions. Damaged fuel assemblies shall also contain top and bottom end fittings or nozzles or tie plates depending on the fuel type.
Failed Fuel	Failed fuel is defined as fuel rods that have been removed from a fuel assembly, breached rods, grossly breached rods, and other defective rods. Fuel rods that have been removed from a fuel assembly may be placed in a secondary container, such as a rod storage basket. Individual fuels rods that are not failed can be stored in a failed fuel canister (FFC) without a secondary container such as a rod storage basket. The maximum number of fuel rods that may be stored in the FFC is 100 with a total uranium loading limited to 2.50 kg initial uranium per rod.
Reconstituted Fuel Assemblies: • Maximum Number of Irradiated Stainless Steel Rods in Reconstituted Assemblies per DSC • Maximum Number of Irradiated Stainless Steel Rods per Reconstituted Fuel Assembly • Maximum Number of Reconstituted Assemblies per DSC with unlimited number of low enriched UO_2 rods, or Zr Rods or Zr Pellets or Unirradiated Stainless Steel Rods	40 10 32
Control Components (CCs)	• Up to 32 CCs are authorized for storage in 32PTH1-S, 32PTH1-M and 32PTH1-L DSCs. • Authorized CCs include burnable poison rod assemblies (BPRAs), thimble plug assemblies (TPAs), control rod assemblies (CRAs), rod cluster control assemblies (RCCAs), axial power shaping rod assemblies (APSRAs), orifice rod assemblies (ORAs), vibration suppression inserts (VSIs), neutron source assemblies (NSAs) and neutron sources. Non-fuel hardware that are positioned within the fuel assembly after the fuel assembly is discharged from the core such as guide tube or instrument tube tie rods or anchors, guide tube inserts, BPRA spacer plates or devices that are positioned and operated within the fuel assembly during reactor operation such as those listed above are also considered as CCs. • Design basis radiological characteristics for the CCs are listed in Table 1-1ee.

(continued)

Table 1-1aa
PWR Fuel Specification for the Fuel to be Stored in the NUHOMS®-32PTH1 DSC

Number of Intact Assemblies	≤ 32
Number and Location of Damaged Assemblies	Up to 16 damaged fuel assemblies with balance intact fuel assemblies, or dummy assemblies are authorized for storage in 32PTH1 DSC. Damaged fuel assemblies are to be placed as shown in Figures 1-26 through 1-28 and Figure 1-28a. The DSC basket cells which store damaged fuel assemblies are provided with top and bottom end caps.
Number and Location of Failed Assemblies	Up to 16 failed fuel assemblies. Balance to be intact and/or damaged fuel assemblies, empty slots, or dummy assemblies depending on the specific head load zoning configurations. Failed fuel assemblies are to be placed in Location 5a as shown in Figure 1-28a or in locations denoted by ** as shown in Figure 1-28. Failed fuel rods are to be encapsulated in an individual FFC provided with a welded bottom closure and a removable top closure. The maximum number of failed fuel rods per FFC that may be stored is 100 with a total uranium loading limited to 2.50 kg initial uranium per rod.
Maximum Assembly plus CC Weight	1715 lbs
Maximum Initial Uranium Content	492 kg/assembly
Fuel Cladding	Zirconium alloy clad fuel
THERMAL/RADIOLOGICAL PARAMETERS: Allowable heat load zoning configurations	Figure 1-26, Figure 1-27, Figure 1-28, Figure 1-28a, Figure 1-28b, or Figure 1-28c
Maximum Planar Average Initial Fuel Enrichment	Per Table 1-1cc or Table 1-1dd or Table 1-1dd1.
Decay Heat per DSC	≤ 40.8 kW for 32PTH1-S, 32PTH1-M and 32PTH1-L DSCs (Type 1 Basket). ≤ 31.2 kW for 32PTH1-S, 32PTH1-M and 32PTH1-L DSCs (Type 2 Basket).
Minimum Boron Loading	Per Table 1-1cc or Table 1-1dd or Table 1-1dd1.
Minimum Cooling Time	All fuel per Table 1-3k and Table 1-3p (32PTH1 DSC column). A complete set of fuel qualification tables is provided in the UFSAR, Tables M.2-5 through M.2-14f. Only heat loads ≤ 1.5 kW/FA are applicable. These fuel qualification tables are not included in the Technical Specifications by reference and are listed here for convenience.
Maximum Burnup	62 GWd/MTU
Minimum Assembly Average Initial Enrichment	0.2 wt.% U-235

Table 1-1bb
(Not Used)

Table 1-1cc
Maximum Planar Average Initial Enrichment v/s Neutron Poison Requirements for 32PTH1 DSC (Intact Fuel)

Fuel Assembly Class	Maximum Planar Average Initial Enrichment (wt. % U-235) as a Function of Soluble Boron Concentration and Basket Type (Fixed Poison Loading)					
	Minimum Soluble Boron (ppm)	Basket Type[(1)]				
		1A or 2A	1B or 2B	1C or 2C	1D or 2D	1E or 2E
WE 17x17 Assembly Class[(4)]	2000	3.40	3.80	3.90	4.10	4.30
	2300	3.70	4.00	4.20	4.40	4.70
	2400	3.70	4.10	4.30	4.50	4.80
	2500	3.80	4.20	4.40	4.60	4.90
	2800	4.00	4.50	4.70	5.00	5.00
	3000	4.20	4.60	4.80	5.00	5.00
CE 16x16 Assembly Class[(5)]	2000	3.90	4.30	4.50	4.80	5.00
	2300	4.10	4.60	4.80	5.00	5.00
	2400	4.20	4.70	4.90	5.00	5.00
	2500	4.30	4.80	5.00	5.00	5.00
	2800	4.60	5.00	5.00	5.00	5.00
	3000	4.70	5.00	5.00	5.00	5.00
BW 15x15 Assembly Class[(5)]	2000	3.30	3.60	3.80	4.00	4.20
	2300	3.50	3.90	4.10	4.30	4.60
	2400	3.60	4.00	4.20	4.40	4.70
	2500	3.70	4.10	4.30	4.50	4.80
	2800	3.90	4.30	4.50	4.80	5.00
	3000	4.10	4.50	4.70	5.00	5.00
CE 15x15 Assembly Class[(5)]	2000	3.50	3.90	4.00	4.20	4.40
	2300	3.80	4.10	4.30	4.60	4.80
	2400	3.90	4.30	4.40	4.70	4.90
	2500	3.90	4.35	4.50	4.80	5.00
	2800	4.20	4.60	4.80	5.00	5.00
	3000	4.30	4.80	5.00	5.00	5.00

(continued)

Table 1-1cc
Maximum Planar Average Initial Enrichment v/s Neutron Poison Requirements for 32PTH1 DSC (Intact Fuel)

Fuel Assembly Class	Maximum Planar Average Initial Enrichment (wt. % U-235) as a Function of Soluble Boron Concentration and Basket Type (Fixed Poison Loading)					
	Minimum Soluble Boron (ppm)	Basket Type[(1)]				
		1A or 2A	1B or 2B	1C or 2C	1D or 2D	1E or 2E
WE 15x15 Assembly Class[(5)]	2000	3.50	3.80	3.90	4.20	4.40
	2300	3.70	4.10	4.20	4.50	4.80
	2400	3.80	4.20	4.40	4.60	4.90
	2500	3.90	4.30	4.50	4.70	5.00
	2800	4.10	4.50	4.70	5.00	5.00
	3000	4.20	4.70	4.90	5.00	5.00
CE 14x14 Assembly Class[(6)]	2000	3.90	4.40	4.60	4.90	5.00
	2300	4.20	4.70	5.00	5.00	5.00
	2400	4.30	4.80	5.00	5.00	5.00
	2500	4.40	5.00	5.00	5.00	5.00
	2800	4.60	5.00	5.00	5.00	5.00
	3000	4.80	5.00	5.00	5.00	5.00
WE 14x14 Assembly Class[(7)]	2000	4.20	4.70	4.90	5.00	5.00
	2300	4.50	5.00	5.00	5.00	5.00
	2400	4.60	5.00	5.00	5.00	5.00
	2500	4.70	5.00	5.00	5.00	5.00
	2800	5.00	5.00	5.00	5.00	5.00
	3000	5.00	5.00	5.00	5.00	5.00

Notes:

(1) The fixed poison loading requirements as a function of Basket Type are specified in Table 1-1ff.
(2) Not used.
(3) Not used.
(4) Reduce Maximum Planar Average Initial Enrichment by 0.05 wt. % U-235 for assemblies with CCs that extend into the active fuel region.
(5) Reduce Maximum Planar Average Initial Enrichment by 0.10 wt. % U-235 for assemblies with CCs that extend into the active fuel region.
(6) Reduce Maximum Planar Average Initial Enrichment by 0.25 wt. % U-235 for assemblies with CCs that extend into the active fuel region.
(7) No reduction in Maximum Planar Average Initial Enrichment required for assemblies with CCs that extend into the active fuel region.

Table 1-1dd
Maximum Planar Average Initial Enrichment v/s Neutron Poison Requirements for 32PTH1 DSC (Damaged and Failed (3) Fuel)

Fuel Assembly Class	Maximum Planar Average Initial Enrichment (wt. % U-235) as a Function of Soluble Boron Concentration and Basket Type (Fixed Poison Loading)					
	Minimum Soluble Boron (ppm)	Basket Type(1)				
		1A or 2A	1B or 2B	1C or 2C	1D or 2D	1E or 2E
WE 17x17 Assembly Class (without CCs) (2)	2000	3.40	3.70	3.80	4.05	4.25
	2300	3.60	3.95	4.10	4.35	4.65
	2400	3.70	4.05	4.20	4.45	4.75
	2500	3.75	4.15	4.30	4.55	4.85
	2800	4.00	4.40	4.60	4.85	5.00
	3000	4.15	4.55	4.75	5.00	5.00
WE 17x17 Assembly Class (with CCs) (2)	2000	3.35	3.65	3.75	4.00	4.20
	2300	3.55	3.90	4.05	4.30	4.55
	2400	3.65	4.00	4.15	4.40	4.70
	2500	3.70	4.10	4.25	4.50	4.75
	2800	3.95	4.35	4.55	4.80	5.00
	3000	4.10	4.50	4.70	5.00	5.00
CE 16x16 Assembly Class (without CCs)	2000	3.65	4.05	4.20	4.50	4.75
	2300	3.90	4.30	4.50	4.80	5.00
	2400	4.00	4.40	4.60	4.90	5.00
	2500	4.05	4.50	4.70	5.00	5.00
	2800	4.30	4.80	5.00	5.00	5.00
	3000	4.50	4.95	5.00	5.00	5.00
CE 16x16 Assembly Class (with CCs)	2000	3.60	3.95	4.10	4.40	4.65
	2300	3.80	4.20	4.40	4.70	4.90
	2400	3.90	4.30	4.50	4.80	5.00
	2500	4.00	4.40	4.60	4.80	5.00
	2800	4.20	4.70	4.90	5.00	5.00
	3000	4.40	4.85	5.00	5.00	5.00
BW 15x15 Assembly Class (without CCs)	2000	3.30	3.60	3.75	3.95	4.20
	2300	3.50	3.90	4.05	4.30	4.50
	2400	3.60	4.00	4.15	4.40	4.65
	2500	3.65	4.05	4.20	4.50	4.75
	2800	3.90	4.30	4.50	4.75	5.00
	3000	4.05	4.45	4.65	5.00	5.00

(continued)

Table 1-1dd
Maximum Planar Average Initial Enrichment v/s Neutron Poison Requirements for 32PTH1 DSC (Damaged and Failed (3) Fuel)

Fuel Assembly Class	Maximum Planar Average Initial Enrichment (wt. % U-235) as a Function of Soluble Boron Concentration and Basket Type (Fixed Poison Loading)					
	Minimum Soluble Boron (ppm)	Basket Type(1)				
		1A or 2A	1B or 2B	1C or 2C	1D or 2D	1E or 2E
BW 15x15 Assembly Class (with CCs) (2)	2000	3.20	3.50	3.65	3.90	4.10
	2300	3.40	3.80	3.95	4.20	4.40
	2400	3.50	3.90	4.05	4.30	4.55
	2500	3.60	4.00	4.15	4.40	4.65
	2800	3.80	4.20	4.40	4.65	4.90
	3000	3.95	4.40	4.55	4.90	5.00
CE 15x15 Assembly Class (without CCs) (2)	2000	3.35	3.70	3.80	4.05	4.25
	2300	3.60	3.95	4.10	4.30	4.60
	2400	3.65	4.05	4.20	4.45	4.70
	2500	3.75	4.15	4.30	4.55	4.80
	2800	4.00	4.40	4.60	4.85	5.00
	3000	4.15	4.55	4.75	5.00	5.00
CE 15x15 Assembly Class (with CCs) (2)	2000	3.30	3.65	3.80	4.00	4.20
	2300	3.55	3.90	4.05	4.30	4.55
	2400	3.65	4.00	4.15	4.45	4.65
	2500	3.70	4.10	4.25	4.50	4.80
	2800	3.95	4.35	4.55	4.80	5.00
	3000	4.10	4.55	4.70	5.00	5.00
WE 15x15 Assembly Class (without CCs)	2000	3.40	3.75	3.90	4.15	4.30
	2300	3.65	4.00	4.20	4.45	4.70
	2400	3.75	4.10	4.30	4.55	4.80
	2500	3.80	4.20	4.40	4.65	4.90
	2800	4.05	4.45	4.60	4.90	5.00
	3000	4.20	4.60	4.80	5.00	5.00

(continued)

Table 1-1dd
Maximum Planar Average Initial Enrichment v/s Neutron Poison Requirements for 32PTH1 DSC (Damaged and Failed (3) Fuel)

Fuel Assembly Class	Maximum Planar Average Initial Enrichment (wt. % U-235) as a Function of Soluble Boron Concentration and Basket Type (Fixed Poison Loading)					
	Minimum Soluble Boron (ppm)	Basket Type(1)				
		1A or 2A	1B or 2B	1C or 2C	1D or 2D	1E or 2E
WE 15x15 Assembly Class (with CCs)	2000	3.35	3.65	3.80	4.00	4.20
	2300	3.55	3.90	4.10	4.35	4.60
	2400	3.65	4.00	4.20	4.45	4.70
	2500	3.70	4.10	4.30	4.55	4.80
	2800	3.95	4.35	4.50	4.80	5.00
	3000	4.10	4.50	4.70	5.00	5.00
CE 14x14 Assembly Class (without CCs) (2)	2000	3.70	4.10	4.30	4.60	4.85
	2300	3.95	4.40	4.60	4.95	5.00
	2400	4.05	4.50	4.70	5.00	5.00
	2500	4.15	4.60	4.80	5.00	5.00
	2800	4.40	4.90	5.00	5.00	5.00
	3000	4.55	5.00	5.00	5.00	5.00
CE 14x14 Assembly Class (with CCs) (2)	2000	3.55	3.95	4.10	4.35	4.60
	2300	3.80	4.20	4.40	4.70	4.90
	2400	3.9	4.30	4.50	4.80	5.00
	2500	4.00	4.40	4.60	4.90	5.00
	2800	4.20	4.65	4.90	5.00	5.00
	3000	4.35	4.85	5.00	5.00	5.00
WE 14x14 Assembly Class (without CCs) (2)	2000	3.75	4.15	4.30	4.60	4.85
	2300	3.95	4.45	4.65	5.00	5.00
	2400	4.05	4.55	4.75	5.00	5.00
	2500	4.15	4.65	4.85	5.00	5.00
	2800	4.40	4.90	5.00	5.00	5.00
	3000	4.60	5.00	5.00	5.00	5.00
WE 14x14 Assembly Class (with CCs) (2)	2000	3.70	4.10	4.20	4.50	4.75
	2300	3.90	4.40	4.60	4.90	5.00
	2400	4.00	4.50	4.65	5.00	5.00
	2500	4.10	4.55	4.80	5.00	5.00
	2800	4.30	4.80	5.00	5.00	5.00
	3000	4.50	5.00	5.00	5.00	5.00

Note:

(1) The fixed poison loading requirements as a function of Basket Type are specified in Table 1-1ff.

(2) The fixed poison requirements for this assembly class are also applicable to storage of failed fuel in rod storage baskets (RSBs).

(3) Up to four failed fuel cans are authorized using these requirements. The requirements for greater than four and up to sixteen failed fuel cans are specified in Table 1-1dd1.

Table 1-1dd1
Maximum Planar Average Initial Enrichment for 32PTH1 DSC (Up to 16 FFCs – 16 empty slots)

Fuel Assembly Class	Maximum Planar Average Initial Enrichment (wt. % U-235) as a Function of Soluble Boron Concentration and Basket Type (Fixed Poison Loading)					
	Minimum Soluble Boron (ppm)	Basket Type(1)				
		1A or 2A	1B or 2B	1C or 2C	1D or 2D	1E or 2E
CE 14x14 Assembly Class WE 14x14 Assembly Class BW 15x15 Assembly Class WE 15x15 Assembly Class CE 15x15 Assembly Class CE 16x16 Assembly Class WE 17x17 Assembly Class	2400	NE	NE	5.00	5.00	5.00
	2500	NE	NE	5.00	5.00	5.00
	2800	NE	NE	5.00	5.00	5.00
	3000	NE	NE	5.00	5.00	5.00

NE = Not Evaluated

Notes:

(1) NE = Not Evaluated

(2) The fixed poison loading requirements as a function of Basket Type are specified in Table 1-1ff.

(3) Up to sixteen failed fuel cans are authorized.

Table 1-1ee
Radiological Characteristics for Control Components Stored in the NUHOMS®-32PT and NUHOMS®-32PTH1 DSCs

Parameter	BPRAs, NSAs, CRAs, RCCAs, VSIs, Neutron Sources, and APSRAs	TPAs and ORAs
Maximum Gamma Source (γ/sec/DSC)	1.25E+15	1.31E+14

Note: NSAs and Neutron Sources shall only be stored in the interior compartments of the basket. Interior compartments are those that are completely surrounded by other compartments, including the corners. There are twelve interior compartments in the 32PT and 32PTH1 DSCs.

Table 1-1ff
B10 Specification for the NUHOMS®-32PTH1 Poison Plates

NUHOMS®-32PTH1 DSC Basket Type	Minimum B10 Areal Density, (grams/cm^2)	
	Borated Aluminum or MMC	Boral®
1A or 2A	0.007	0.009
1B or 2B	0.015	0.019
1C or 2C	0.020	0.025
1D or 2D	0.032	N/A
1E or 2E	0.050	N/A

Table 1-1gg
BWR Fuel Specification for the Fuel to be Stored in the NUHOMS®-69BTH DSC

PHYSICAL PARAMETERS: Fuel class	 Intact or damaged 7x7, 8x8, 9x9 or 10x10 BWR assemblies. Damaged fuel assemblies beyond the definition contained below are not authorized for storage.
Fuel damage	Damaged BWR fuel assemblies are assemblies containing fuel rods with known, suspected cladding defects greater than hairline cracks or pinhole leaks. The extent of damage in the fuel assembly, including non-cladding damage, is to be limited such that the fuel assembly will still be able to be handled by normal means. Missing fuel rods are allowed. The extent of damage in the fuel rods is to be limited such that a fuel pellet is not able to pass through the damaged cladding during handling and retrievability is ensured following normal and off-normal conditions. Damaged fuel assemblies shall also contain top and bottom end fittings or nozzles or tie plates depending on the fuel type.
RECONSTITUTED FUEL ASSEMBLIES: • Maximum Number of Irradiated Stainless Steel Rods in Reconstituted Assemblies per DSC • Maximum Number of Irradiated Stainless Steel Rods per Reconstituted Fuel Assembly • Maximum Number of Reconstituted Assemblies per DSC with unlimited number of low enriched UO_2 rods or Zr rods or Zr pellets or Unirradiated Stainless Steel Rods	 40 10 69
Number of intact assemblies	≤ 69
Number and location of damaged assemblies	Up to 24 damaged fuel assemblies, with balance intact or dummy assemblies, are authorized for storage in 69BTH DSC. Damaged fuel assemblies may only be stored in the locations shown in Figure 1-37. The DSC basket cells which store damaged fuel assemblies are provided with top and bottom end caps.
Channels	Fuel may be stored with or without channels, channel fasteners or finger springs.
Maximum Initial Uranium Content	198 kg/assembly
Maximum assembly weight including channels	705 lb
Fuel Cladding	Zirconium alloy clad fuel

(continued)

Table 1-1gg
BWR Fuel Specification for the Fuel to be Stored in the NUHOMS®-69BTH DSC

THERMAL/RADIOLOGICAL PARAMETERS:	
Allowable Heat Load Zoning Configurations for each 69BTH DSC Maximum Lattice Average Initial Enrichment	Per Figure 1-31 or Figure 1-32 or Figure 1-33 or Figure 1-34 or Figure 1-35 or Figure 1-36 or Figure 1-38. Per Table 1-1jj or Table 1-1kk
Maximum Pellet Enrichment	5.0 wt. % U-235
Maximum decay heat limits for HLZCs 1, 2, 3, 4, 5, 6 and 7	Per Figure 1-31 or Figure 1-32 or Figure 1-33 or Figure 1-34 or Figure 1-35 or Figure 1-36 or Figure 1-38.
Decay heat per DSC	≤ 35.0 kW
Minimum B-10 Concentration in Poison Plates	Per Table 1-1jj or Table 1-1kk
Minimum Cooling Time	All fuel per Table 1-7m. For HLZC 4, the peripheral region per Table 1-7k. The peripheral region corresponds to zone 5 in Figure 1-34. A complete set of fuel qualification tables is provided in the UFSAR, Tables Y.2-5 through Y.2-16, Table Y.2-17a, Table Y.2-17b. These fuel qualification tables are not included in the Technical Specifications by reference and are listed here for convenience.
Maximum Burnup	62 GWd/MTU
Minimum Assembly Average Initial Enrichment	0.5 wt.% U-235

Table 1-1hh
Not Used

Table 1-1ii
(Not Used)

Table 1-1jj
BWR Fuel Assembly Lattice Average Initial Enrichment vs Minimum B10 Requirements for the NUHOMS®-69BTH DSC Poison Plates (Intact Fuel)

Basket Type	Maximum Lattice Average Enrichment(1) (wt. % U-235)	Minimum B10 Areal Density (grams/cm^2)	
		Borated Aluminum/MMC	Boral®
A	3.70	0.021	0.025
B	4.10	0.031	0.037
C	4.40	0.039	0.047
D	4.60	0.046	0.055
E	4.80	0.053	0.064
F	5.00	0.061	0.073

(1) For LaCrosse fuel assemblies, the enrichment shall be reduced by 0.1 wt. % U-235.

Table 1-1kk
BWR Fuel Assembly Lattice Average Initial Enrichment vs Minimum B10 Requirements for the NUHOMS®-69BTH DSC Poison Plates (Damaged Fuel)

	Maximum Lattice Average Initial Enrichment (1) (wt.% U-235)				Minimum B10 Areal Density (grams/cm²)	
Basket ID	Intact Assemblies	Up to 4 Damaged Assemblies(2)	5 to 8 Damaged Assemblies(2)	9 to 24 Damaged Assemblies(2)	Borated Aluminum/MMC	Boral®
A	3.70	3.70	3.30	2.80	0.021	0.025
B	4.10	4.10	3.60	3.00	0.031	0.037
C	4.40	4.20	3.60	3.10	0.039	0.047
D	4.60	4.40	3.70	3.20	0.046	0.055
E	4.80	4.40	3.70	3.20	0.053	0.064
F	5.00	4.80	3.90	3.40	0.061	0.073

(1) For LaCrosse fuel assemblies, the enrichment shall be reduced by 0.1 wt. % U-235.
(2) Allowable locations for damaged assemblies within the 69BTH basket are per Figure 1-37.

Table 1-1ll
PWR Fuel Specification for the Fuel to be Stored in the NUHOMS®-37PTH DSC

PHYSICAL PARAMETERS: Fuel Class	Intact or damaged unconsolidated WE 17x17, CE 16X16, CE 15x15, WE 15x15, CE 14x14, and WE 14x14 class PWR assemblies (with or without control components). Damaged fuel assemblies beyond the definition contained below are not authorized for storage.
Fuel Damage	Damaged PWR fuel assemblies are assemblies containing missing or partial fuel rods, fuel rods with known or suspected cladding defects greater than hairline cracks or pinhole leaks. The extent of damage in the fuel assembly, including non-cladding damage, is to be limited such that a fuel assembly is able to be handled by normal means. Missing fuel rods are allowed. The extent of damage in the fuel rods is to be limited such that a fuel pellet is not able to pass through the damaged cladding during handling and retrievability is ensured following normal and off-normal conditions. Damaged fuel assemblies shall also contain top and bottom end fittings or nozzles or tie plates depending on the fuel type.
Reconstituted Fuel Assemblies:	
• Maximum Number of Irradiated Stainless Steel Rods in Reconstituted Assemblies per DSC	40
• Maximum Number of Irradiated Stainless Steel Rods per Reconstituted Fuel Assembly	10
• Maximum Number of Reconstituted Assemblies per DSC with Unlimited Number of Low Enriched UO_2 Rods, or Zr Rods or Zr Pellets or Unirradiated Stainless Steel Rods	37
Control Components (CCs)	• Up to 37 CCs are authorized for storage in 37PTH-S, and 37PTH-M DSCs. • Authorized CCs include burnable poison rod assemblies (BPRAs), thimble plug assemblies (TPAs), control rod assemblies (CRAs), rod cluster control assemblies (RCCAs), axial power shaping rod assemblies (APSRAs), orifice rod assemblies (ORAs), neutron source assemblies (NSAs), vibration suppression inserts (VSIs) and neutron sources. Non-fuel hardware that are positioned within the fuel assembly after the fuel assembly is discharged from the core such as guide tube or instrument tube tie rods or anchors, guide tube inserts, BPRA spacer plates or devices that are positioned and operated within the fuel assembly during reactor operation such as those listed above are also considered as CCs. • Design basis radiological characteristics for the CCs are listed in Table 1-1qq.

(continued)

Table 1-1ll
PWR Fuel Specification for the Fuel to be Stored in the NUHOMS®-37PTH DSC

Number of Intact Assemblies	≤ 37
Number and Location of Damaged Assemblies	Up to four damaged fuel assemblies. Balance may be intact fuel assemblies, or dummy assemblies that are authorized for storage in 37PTH DSC. Damaged fuel assemblies are to be placed in the outer 4 locations as shown in Figure 1-39 and Figure 1-40. The DSC basket cells which store damaged fuel assemblies are provided with top and bottom end caps.
Maximum Assembly plus CC Weight	1665 lbs
Maximum Initial Uranium Content	492 kg/assembly
Fuel Cladding	Zirconium alloy clad fuel
Thermal/Radiological Parameters: Allowable heat load zoning configurations	Figure 1-39 or Figure 1-40.
Maximum Planar Average Initial Fuel Enrichment	Per Table 1-1oo and Table 1-1pp, Figure 1-41 and Figure 1-42
Decay Heat per DSC	≤ 30.0 kW
Minimum Boron Loading	Per Table 1-1oo and Table 1-1pp
Minimum Cooling Time	All fuel per Table 1-3i and Table 1-3p (37PTH DSC column). A complete set of fuel qualification tables is provided in the UFSAR, Tables M.2-5 through M.2-14f. Only heat loads ≤ 1.2 kW/FA are applicable. These fuel qualification tables are not included in the Technical Specifications by reference and are listed here for convenience
Maximum Burnup	62 GWd/MTU
Minimum Assembly Average Initial Enrichment	0.2 wt.% U-235

Table 1-1mm
Not Used

Table 1-1nn
(Not Used)

Table 1-1oo
Maximum Planar Average Initial Enrichment vs. Minimum Soluble Boron Concentration for 37PTH DSC (Intact and Damaged Fuel)

Fuel Assembly Class	Maximum Planar Average Enrichment[(2)(3)] (wt. % U-235)		
	Minimum Soluble Boron Concentration (PPM)	Without CCs	With CCs
CE 14x14	2000	4.50	4.35[(1)]
	2300	4.90	4.65
	2400	5.00	4.75
	2500	5.00	4.85
	2800	5.00	5.00
	3000	5.00	5.00
CE 15x15	2000	4.05	4.00[(1)]
	2300	4.35	4.30[(1)]
	2400	4.45	4.40
	2500	4.55	4.50
	2800	4.85[(1)]	4.75
	3000	5.00	4.95
CE 16x16	2000	4.40	4.30
	2300	4.75	4.60
	2400	4.90[(1)]	4.75
	2500	5.00[(1)]	4.85
	2800	5.00	5.00
	3000	5.00	5.00
WE 14x14	2000	4.75	4.75
	2300	5.00	5.00
	2400	5.00	5.00
	2500	5.00	5.00
	2800	5.00	5.00
	3000	5.00	5.00
WE 15x15	2000	3.90	3.85
	2300	4.20	4.15
	2400	4.30	4.20
	2500	4.40	4.30
	2800	4.70	4.60
	3000	4.85	4.75
WE 17x17	2000	3.90	3.85
	2300	4.20	4.15
	2400	4.30	4.25
	2500	4.40	4.35
	2800	4.65	4.60
	3000	4.85	4.80

(1) For damaged fuel assemblies, the maximum planar average initial enrichment is reduced by 0.05 wt. % U-235.
(2) There is only one basket type. The fixed poison loading is per Table 1-1rr.
(3) Linear interpolation is allowed between adjacent maximum planar average initial enrichments and soluble boron concentration levels.

Table 1-1pp
Maximum Planar Average Initial Enrichment versus Minimum Soluble Boron Concentration for 37PTH DSC and Poison Rod Assemblies (Intact and Damaged Fuel)

Fuel Assembly Class	Maximum Planar Average Enrichment (2) wt% U-235)		
	Minimum Soluble Boron Concentration (PPM)	Without CCs	With CCs
WE 17x17 (Nine PRAs)	2000	4.30	4.25
	2300	4.65	4.60
	2400	4.75	4.70
	2500	4.85	4.80
	2600	5.00(1)	4.90
WE 17x17 (Five PRAs)	2600	4.80(1)	4.75(1)

Notes:
1. For damaged fuel assemblies, the maximum allowed initial U-235 enrichment is reduced by 0.05 wt%.
2. Linear interpolation is allowed between adjacent maximum planar average initial enrichments and soluble boron concentration levels.

Table 1-1qq
Radiological Characteristics for Control Components Stored in the NUHOMS®-37PTH DSC

Parameter	BPRAs, NSAs, CRAs, RCCAs, VSIs, APSRAs and Neutron Sources	TPAs and ORAs
Maximum gamma source (γ/sec/DSC)	1.45E+15	1.52E+14

Note: NSAs and neutron sources shall only be stored in the interior compartments of the basket. Interior compartments are those compartments that are completely surrounded by other compartments, including the corners. There are thirteen interior compartments in the 37PTH DSC.

Table 1-1rr
B10 Specification for the NUHOMS®-37PTH Poison Plates

37PTH DSC Type	Number of PRAs	Minimum B10 Areal Density for Boral® (grams/cm^2)	Minimum B10 Areal Density for Borated Aluminum or MMC (grams/cm^2)
37PTH-M or 37PTH-S	0	0.024	0.020
	5		
	9		

Table 1-1ss
B-10 Specification for the NUHOMS® - 37PTH PRAs

37PTH DSC Type	Number of PRAs	Minimum B-10 Content per Rod (g/cm)
37PTH-M or 37PTH-S	5	0.088
	9	

Table 1-2a
PWR Fuel Qualification Table for the Standardized NUHOMS®-24P DSC (Fuel Without BPRAs)

(Minimum required years of cooling time after reactor core discharge)

BU (GWd/MTU)	Assembly Average Initial Enrichment (wt. % U-235)																				
	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
10	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
15	5	5	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
20	5	5	5	5	5	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
25		5	5	5	5	5	5	5	5	a	a	a	a	a	a	a	a	a	a	a	a
28				5	5	5	5	5	5	5	5	5	a	a	a	a	a	a	a	a	a
30						5	5	5	5	5	5	5	5	a	a	a	a	a	a	a	a
32							5	5	5	5	5	5	5	5	5	a	a	a	a	a	a
34								6	5	5	5	5	5	5	5	5	5	a	a	a	a
36									6	6	6	6	5	5	5	5	5	5	5	a	a
38											7	6	6	6	6	6	6	6	5	5	5
40				**Not Acceptable**								8	8	8	7	6	6	6	6	6	6
41				**or**								9	9	9	8	8	8	8	8	8	8
42				**Not Analyzed**									10	9	9	9	9	9	9	8	8
43													10	10	10	10	10	9	9	9	9
44														11	11	11	11	10	10	10	10
45														12	12	11	11	11	11	11	11

a) Minimum Cooling Time 5 years, and Minimum 2350 ppm soluble boron required in the DSC cavity water during loading or unloading.

Notes:

- BU = Assembly average burnup
- Use burnup and enrichment to look up minimum cooling time in years. Licensee is responsible for ensuring that uncertainties in fuel enrichment and burnup are correctly accounted for during fuel qualification.
- Round burnup UP to next higher entry, round enrichments DOWN to next lower entry.
- Fuel with an initial enrichment less than 2.0 wt. % U-235 must be qualified for storage using the alternate nuclear parameters specified in Table 1-1a. Fuel with an initial enrichment greater than 4.0 wt. % U-235 is unacceptable for storage.
- Fuel with a burnup greater than 45 GWd/MTU is unacceptable for storage.
- Example: An assembly with an initial enrichment of 3.65 wt. % U-235 and a burnup of 42.5 GWd/MTU is acceptable for storage after a ten-year cooling time as defined at the intersection of 3.6 wt. % U-235 (rounding down) and 43 GWd/MTU (rounding up) on the qualification table.

Table 1-2b
BWR Fuel Qualification Table for the Standardized NUHOMS®-52B DSC

(Minimum required years of cooling time after reactor core discharge)

BU (GWd/ MTU)	Assembly Average Initial Enrichment (wt. % U-235)																				
	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
15	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
20	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
25	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
30				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
32					6	6	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5
34						8	8	8	8	8	8	8	8	7	6	6	6	6	6	6	6
35							10	10	10	10	9	8	8	8	8	8	8	8	6	6	6
36							11	11	11	11	11	10	10	10	10	10	10	9	8	8	8
37								13	13	12	12	12	12	11	11	11	11	11	10	10	10
38								15	14	14	14	13	13	13	13	12	12	12	12	12	11
39			Not Acceptable					18	17	17	16	16	16	15	14	14	14	14	13	13	13
40			or						21	21	20	20	19	18	17	17	16	16	16	16	15
42			Not Analyzed							22	22	22	21	21	20	20	20	19	18	17	17
44										24	24	23	23	23	22	22	21	21	21	20	20
45											25	24	24	23	23	23	22	22	22	21	21

Notes:

- BU = Assembly average burnup
- Use burnup and enrichment to look up minimum cooling time in years. Licensee is responsible for ensuring that uncertainties in fuel enrichment and burnup are correctly accounted for during fuel qualification.
- Round burnup UP to next higher entry, round enrichments DOWN to next lower entry.
- Fuel with an initial enrichment less than 2.0 wt. % U-235 must be qualified for storage using the alternate nuclear parameters specified in Table 1-1b. Fuel with an initial enrichment greater than 4.0 wt. % U-235 is unacceptable for storage.
- Fuel with a burnup greater than 45 GWd/MTU is unacceptable for storage. Fuel with a burnup less than 15 GWd/MTU is acceptable after three years cooling time provided the physical parameters from Table 1-1b have been met.
- Example: An assembly with an initial enrichment of 3.05 wt. % U-235 and a burnup of 34.5 GWd/MTU is acceptable for storage after a nine-year cooling time as defined at the intersection of 3.0 wt. % U-235 (rounding down) and 35 GWd/MTU (rounding up) on the qualification table.

Table 1-2c
PWR Fuel Qualification Table for the Standardized NUHOMS®-24P DSC (Fuel with BPRAs)

(Minimum required years of cooling time after reactor core discharge)

BU (GWd/ MTU)	Assembly Average Initial Enrichment (wt. % U-235)																				
	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
10	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
15	5	5	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
20	5	5	5	5	5	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a	a
25		5	5	5	5	5	5	5	5	a	a	a	a	a	a	a	a	a	a	a	a
28				5	5	5	5	5	5	5	5	5	a	a	a	a	a	a	a	a	a
30						6	6	6	5	5	5	5	5	a	a	a	a	a	a	a	a
32							6	6	6	6	6	6	5	5	5	a	a	a	a	a	a
34								7	6	6	6	6	6	6	6	6	6	a	a	a	a
36									8	7	7	7	6	6	6	6	6	6	6	a	a
38											8	8	7	7	7	7	6	6	6	6	6
40					**Not Acceptable**							9	9	8	8	8	7	7	7	7	6
41					**or**							10	9	9	9	9	8	8	8	8	8
42					**Not Analyzed**								10	10	9	9	9	9	9	9	9
43													11	11	11	10	10	10	10	9	9
44														12	11	11	11	11	10	10	10
45														13	12	12	12	11	11	11	11

a) Minimum Cooling Time 5 years, and Minimum 2350 ppm soluble boron required in the DSC cavity water during loading or unloading.

Notes:

- BU = Assembly average burnup
- BPRA Burnup shall not exceed that of a BPRA irradiated in fuel assemblies with a total burnup of 36,000 MWd/MTU.
- Minimum cooling time for a BPRA is 5 years for B&W designs and 10 years for Westinghouse designs, regardless of the required assembly cooling time.
- Use burnup and enrichment to look up minimum cooling time in years. Licensee is responsible for ensuring that uncertainties in fuel enrichment and burnup are correctly accounted for during fuel qualification.
- Round burnup UP to next higher entry, round enrichments DOWN to next lower entry.
- Fuel with an initial enrichment less than 2.0 wt. % U-235 must be qualified for storage using the alternate nuclear parameters specified in Table 1-1a. Fuel with an initial enrichment greater than 4.0 wt. % U-235 is unacceptable for storage.
- Fuel with a burnup greater than 45 GWd/MTU is unacceptable for storage.
- Example: An assembly with an initial enrichment of 3.65 wt. % U-235 and a burnup of 42.5 GWd/MTU is acceptable for storage after a ten-year cooling time as defined at the intersection of 3.6 wt. % U-235 (rounding down) and 43 GWd/MTU (rounding up) on the qualification table.

Tables 1-2d through 1-2o are deleted.

Table 1-2p
PWR Fuel Qualification Table for Zone 3 with 1.3 kW per Assembly, Fuel with or without CCs, for the NUHOMS®-24PHB DSC

(Minimum required years of cooling time after reactor core discharge)

BU	Assembly Average Initial Enrichment (wt. % U-235)																									
(GWd/MTU)	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5
10	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
15	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
25		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
28			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
30						5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
32							5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
34								5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
36									5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
38											5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
39											5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
40											5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
41											5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
42											6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
43											6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
44											6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
45			Not Analyzed										6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
46													6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1
47													6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
48													6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
49													6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
50															6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
51															6.7	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
52															7.0	6.9	6.9	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
53															7.3	7.2	7.2	7.1	7.1	7.0	6.9	6.9	6.9	6.9	6.9	6.9
54															7.7	7.6	7.5	7.4	7.4	7.3	7.3	7.2	7.1	7.1	7.0	7.0
55															8.0	8.0	7.9	7.8	7.7	7.7	7.6	7.5	7.5	7.4	7.3	7.3

- BU = Assembly average burnup.
- Use burnup and enrichment to look up minimum cooling time in years. For fuel assemblies reconstituted with up to 10 stainless steel rods only, if the look up cooling time is less than 9.0 years then a minimum cooling time of 9.0 years shall be used. Licensee is responsible for ensuring that uncertainties in fuel enrichment and burnup are correctly accounted for during fuel qualification.
- Round burnup UP to next higher entry, round enrichments DOWN to next lower entry.
- Fuel with an initial enrichment greater than 4.5 wt.% U-235 is unacceptable for storage.
- Fuel with a burnup less than 10 GWd/MTU is acceptable for storage after 5-years cooling.
- Example: An assembly with an initial enrichment of 3.75 wt. % U-235 and a burnup of 46.5 GWd/MTU is acceptable for storage after a 6.2 years cooling time as defined by 3.7 wt. % U-235 (rounding down) and 47 GWd/MTU (rounding up) on the qualification table.
- See Figure 1-8 and 1-9 for a description of zones.
- For fuel assemblies reconstituted with Zirconium-alloy clad uranium-oxide rods use the assembly average enrichment to determine the minimum cooling time.
- The cooling times for damaged and intact assemblies are identical.
- For fuel assemblies containing BLEU fuel pellets, add 3 years of additional cooling time to the values shown in this table.

Table 1-2q
BWR Fuel Qualification Table for NUHOMS®-61BT DSC

(Minimum required years of cooling time after reactor core discharge)

BU (GWd/ MTU	Assembly Average Initial Enrichment (wt. % U-235)																														
	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4
10	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
15	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
20	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
25	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4
28	Not Acceptable or Not Analyzed				6	6	6	6	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5
30					7	7	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
32					8	8	8	8	8	7	7	7	7	7	7	7	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6
34					9	9	9	9	9	9	8	8	8	8	8	8	8	8	8	7	7	7	7	7	7	7	7	7	7	7	7
36					11	11	11	10	10	10	10	10	9	9	9	9	9	9	9	9	8	8	8	8	8	8	8	8	8	8	8
38					14	13	13	12	12	12	12	11	11	11	11	11	10	10	10	10	10	10	9	9	9	9	9	9	9	9	9
39					15	14	14	14	13	13	13	12	12	12	12	11	11	11	11	11	10	10	10	10	10	10	10	9	9	9	9
40					16	16	15	15	15	14	14	14	13	13	13	12	12	12	12	12	11	11	11	11	11	10	10	10	10	10	10

This table provides an alternate methodology as cross referenced in Tables 1-1c and 1-1j for determination of fuel assemblies qualified for storage in NUHOMS®-61BT DSC.

- BU = Assembly average burnup
- Use burnup and enrichment to look up minimum cooling time in years. Licensee is responsible for ensuring that uncertainties in fuel enrichment and burnup are conservatively applied in determination of actual values for these two parameters.
- Round burnup UP to next higher entry, round enrichments DOWN to next lower entry.
- Fuel with an initial enrichment less than 1.4 and greater than 4.4 wt.% U-235 is unacceptable for storage.
- Fuel with a burnup greater than 40 GWd/MTU is unacceptable for storage.
- Fuel with a burnup less than 10 GWd/MTU is acceptable for storage after 4 years cooling.
- Example: An assembly with an initial enrichment of 3.75 wt. % U-235 and a burnup of 39.5 GWd/MTU is acceptable for storage after a eleven-year cooling time as defined by 3.7 wt. % U-235 (rounding down) and 40 GWd/MTU (rounding up) on the qualification table.
- For fuel assemblies containing BLEU fuel pellets, add 3 years of additional cooling time to the values shown in this table.

Tables 1-3a through 1-3h are deleted.

Table 1-3i
PWR Fuel Qualification Table for 1.2 kW per Fuel Assembly for the NUHOMS® 37PTH DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 380 kgU per Fuel Assembly)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																											
GWd/MTU	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0
21					2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
22					2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1
23					2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
24					2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2
25					2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
26					2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
27					3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4
28					3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
29					3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5
30					3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6
31					3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
32					3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7
33					3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8
34					3.6	3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
35					3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9
36					3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0
37					3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1
38					4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2
39					4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2
40					4.2	4.2	4.2	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3
41					4.4	4.3	4.3	4.3	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4
42					4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.4
43					4.7	4.6	4.6	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.5
44					4.9	4.8	4.7	4.7	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.6	3.6
45					5.0	5.0	4.9	4.9	4.8	4.8	4.7	4.7	4.6	4.6	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.7	3.7
46																					4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.8	3.8
47																					4.6	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	4.0	3.9
48																					4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.0
49																							4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.2
50																							4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.3
51																							5.1	5.1	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.4	4.4	4.4
52																							5.3	5.2	5.2	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.7	4.7	4.7	4.7	4.6	4.6	4.6	4.5	4.5
53																							5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.7
54																							5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.8	4.8
55																							5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.4	5.4	5.4	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.0	5.0	5.0	4.9	4.9
56																							6.1	6.0	6.0	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.1
57																										6.1	6.1	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.3	5.3	5.3	5.2
58																										6.4	6.3	6.2	6.2	6.1	6.0	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.5	5.4
59																										6.6	6.6	6.5	6.4	6.3	6.3	6.2	6.2	6.1	6.0	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6
60																										6.9	6.8	6.8	6.7	6.6	6.5	6.5	6.4	6.3	6.3	6.2	6.2	6.1	6.0	6.0	5.9	5.9	5.9	5.8
61																												7.0	7.0	6.9	6.8	6.7	6.7	6.6	6.5	6.5	6.4	6.3	6.3	6.2	6.2	6.1	6.1	6.0
62																												7.4	7.3	7.2	7.1	7.0	6.9	6.9	6.8	6.7	6.7	6.6	6.5	6.5	6.4	6.4	6.3	6.3
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

(continued)

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3i
PWR Fuel Qualification Table for 1.2 kW per Fuel Assembly for the NUHOMS® 37PTH DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 475 kgU per Fuel Assembly)

BU GWd/MTU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																			
	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
15	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1
16	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2
17	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3
18	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4
19	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5
20	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6
21					2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
22					3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8
23					3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8
24					3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9
25					3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0
26					3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1
27					3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2
28					3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3
29					3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4
30					3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5
31					4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6
32					4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7
33					4.3	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8
34					4.4	4.4	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9
35					4.6	4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0
36					4.7	4.7	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.2
37					4.9	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.3	4.3	4.3
38					5.1	5.0	5.0	4.9	4.9	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4
39					5.2	5.2	5.1	5.1	5.0	5.0	4.9	4.9	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5
40					5.5	5.4	5.3	5.3	5.2	5.1	5.1	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7
41					5.7	5.6	5.5	5.5	5.4	5.4	5.3	5.2	5.2	5.1	5.1	5.0	5.0	4.9	4.9	4.9
42					5.9	5.9	5.8	5.7	5.6	5.6	5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.1	5.1	5.0
43					6.2	6.1	6.0	6.0	5.9	5.8	5.7	5.7	5.6	5.5	5.5	5.4	5.4	5.3	5.3	5.2
44					6.5	6.4	6.3	6.2	6.2	6.1	6.0	5.9	5.8	5.8	5.7	5.7	5.6	5.5	5.5	5.4
45					6.8	6.7	6.6	6.5	6.4	6.4	6.3	6.2	6.1	6.0	6.0	5.9	5.8	5.8	5.7	5.6
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6

BU GWd/MTU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																							
	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
17	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
18	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
19	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3
20	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
21	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
22	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5
23	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
24	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
25	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7
26	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8
27	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9
28	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
29	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
30	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1
31	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2
32	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3
33	3.8	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4
34	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5
35	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6
36	4.1	4.1	4.1	4.0	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7
37	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8
38	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9
39	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	4.0	4.0
40	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1
41	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.2	4.2	4.2
42	5.0	4.9	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.4	4.3
43	5.2	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.5	4.5	4.5	4.5
44	5.4	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.8	4.8	4.7	4.7	4.7	4.7	4.7	4.6
45	5.6	5.5	5.5	5.4	5.4	5.4	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.9	4.8	4.8	4.8
46	5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.3	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.1	5.1	5.0	5.0	5.0	4.9
47	6.1	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.6	5.5	5.5	5.4	5.4	5.4	5.3	5.3	5.3	5.2	5.2	5.2	5.1	5.1
48	6.3	6.3	6.2	6.1	6.1	6.0	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.6	5.5	5.5	5.5	5.4	5.4	5.4	5.3	5.3
49			6.5	6.4	6.4	6.3	6.2	6.2	6.1	6.1	6.0	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.7	5.6	5.6	5.6	5.5	5.5
50			6.8	6.7	6.6	6.6	6.5	6.4	6.4	6.3	6.3	6.2	6.2	6.1	6.1	6.0	6.0	5.9	5.9	5.8	5.8	5.8	5.7	5.7
51			7.1	7.0	6.9	6.9	6.8	6.7	6.7	6.6	6.5	6.5	6.4	6.4	6.3	6.3	6.2	6.2	6.1	6.1	6.0	6.0	6.0	5.9
52			7.5	7.4	7.3	7.2	7.1	7.0	7.0	6.9	6.8	6.8	6.7	6.6	6.6	6.5	6.5	6.4	6.4	6.3	6.3	6.3	6.2	6.2
53			7.8	7.7	7.6	7.5	7.5	7.4	7.3	7.2	7.1	7.1	7.0	6.9	6.9	6.8	6.8	6.7	6.7	6.6	6.6	6.5	6.5	6.4
54			8.2	8.1	8.0	7.9	7.8	7.7	7.7	7.6	7.5	7.4	7.3	7.3	7.2	7.1	7.1	7.0	7.0	6.9	6.9	6.8	6.8	6.7
55			8.6	8.5	8.4	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.6	7.5	7.4	7.3	7.3	7.2	7.2	7.1	7.0	7.0	6.9
56			9.1	9.0	8.9	8.7	8.6	8.5	8.4	8.3	8.2	8.1	8.0	7.9	7.9	7.8	7.7	7.6	7.6	7.5	7.4	7.4	7.3	7.3
57						9.2	9.1	9.0	8.9	8.8	8.6	8.5	8.4	8.4	8.3	8.2	8.1	8.0	7.9	7.9	7.8	7.7	7.7	7.6
58						9.8	9.6	9.5	9.4	9.2	9.1	9.0	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.3	8.2	8.1	8.0	8.0
59						10.3	10.2	10.0	9.9	9.8	9.6	9.5	9.4	9.3	9.2	9.1	9.0	8.9	8.8	8.7	8.6	8.5	8.5	8.4
60						10.9	10.7	10.6	10.4	10.3	10.2	10.0	9.9	9.8	9.7	9.5	9.4	9.3	9.2	9.1	9.0	9.0	8.9	8.8
61								11.2	11.0	10.9	10.7	10.6	10.5	10.3	10.2	10.1	10.0	9.8	9.7	9.6	9.5	9.4	9.3	9.3
62								11.9	11.7	11.5	11.4	11.2	11.1	10.9	10.8	10.7	10.5	10.4	10.3	10.2	10.1	10.0	9.9	9.8
Enr. wt. %	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

(continued)

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3i
PWR Fuel Qualification Table for 1.2 kW per Fuel Assembly for the NUHOMS® 37PTH DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 492 kgU per Fuel Assembly)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																											
GWd/MTU	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
16	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
17	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2
18	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
19	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
20	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
21					3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5
22					3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
23					3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6
24					3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7
25					3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8
26					3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
27					3.6	3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
28					3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0
29					3.8	3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1
30					3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2
31					4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3
32					4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4
33					4.4	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.5
34					4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6
35					4.7	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7
36					4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8
37					5.0	5.0	4.9	4.9	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9
38					5.2	5.2	5.1	5.1	5.0	5.0	4.9	4.9	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.0	4.0	4.0
39					5.4	5.3	5.3	5.2	5.1	5.1	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1
40					5.6	5.6	5.5	5.4	5.4	5.3	5.2	5.2	5.1	5.1	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.2	4.2	4.2
41					5.9	5.8	5.7	5.7	5.6	5.5	5.5	5.4	5.3	5.3	5.2	5.2	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.4	4.3
42					6.2	6.1	6.0	5.9	5.8	5.8	5.7	5.6	5.6	5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.8	4.8	4.7	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.5	4.5	4.5	4.5
43					6.5	6.4	6.3	6.2	6.1	6.0	5.9	5.9	5.8	5.7	5.7	5.6	5.6	5.5	5.4	5.4	5.3	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.8	4.8	4.7	4.7	4.7	4.7	4.7	4.6
44					6.8	6.7	6.6	6.5	6.4	6.3	6.2	6.1	6.1	6.0	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.3	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.0	5.0	5.0	5.0	4.9	4.9	4.9	4.9	4.8	4.8	4.8
45					7.1	7.0	6.9	6.8	6.7	6.6	6.5	6.4	6.3	6.3	6.2	6.1	6.0	6.0	5.9	5.9	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.5	5.4	5.4	5.3	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.1	5.1	5.0	5.0	5.0	5.0
46																					6.0	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.5	5.4	5.4	5.4	5.3	5.3	5.3	5.2	5.2	5.2	5.2	5.1
47																					6.3	6.2	6.2	6.1	6.1	6.0	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.6	5.5	5.5	5.5	5.4	5.4	5.4	5.3	5.3
48																					6.6	6.5	6.5	6.4	6.3	6.3	6.2	6.2	6.1	6.1	6.0	6.0	5.9	5.9	5.8	5.8	5.8	5.7	5.7	5.6	5.6	5.6	5.5	5.5
49																							6.8	6.7	6.6	6.6	6.5	6.4	6.4	6.3	6.3	6.2	6.2	6.1	6.1	6.0	6.0	5.9	5.9	5.9	5.8	5.8	5.8	5.7
50																							7.1	7.0	6.9	6.9	6.8	6.7	6.7	6.6	6.5	6.5	6.4	6.4	6.3	6.3	6.2	6.2	6.1	6.1	6.1	6.0	6.0	6.0
51																							7.4	7.4	7.3	7.2	7.1	7.0	7.0	6.9	6.8	6.8	6.7	6.7	6.6	6.6	6.5	6.5	6.4	6.4	6.3	6.3	6.2	6.2
52																							7.8	7.7	7.6	7.6	7.5	7.4	7.3	7.2	7.2	7.1	7.0	7.0	6.9	6.9	6.8	6.7	6.7	6.6	6.6	6.6	6.5	6.5
53																							8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.5	7.4	7.4	7.3	7.2	7.2	7.1	7.1	7.0	6.9	6.9	6.8	6.8	6.8
54																							8.7	8.6	8.5	8.4	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.7	7.6	7.5	7.5	7.4	7.3	7.3	7.2	7.2	7.1	7.1
55																							9.2	9.0	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.2	8.1	8.0	7.9	7.8	7.8	7.7	7.6	7.6	7.5	7.4	7.4	7.3
56																							9.7	9.6	9.4	9.3	9.2	9.0	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.2	8.2	8.1	8.0	7.9	7.9	7.8	7.7	7.7
57																										9.8	9.7	9.6	9.4	9.3	9.2	9.1	9.0	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.3	8.2	8.1	8.1
58																										10.4	10.3	10.1	10.0	9.8	9.7	9.6	9.5	9.4	9.3	9.2	9.1	9.0	8.9	8.8	8.7	8.6	8.6	8.5
59																										11.1	10.9	10.7	10.6	10.4	10.3	10.2	10.0	9.9	9.8	9.7	9.6	9.5	9.4	9.3	9.2	9.1	9.0	8.9
60																										11.7	11.6	11.4	11.2	11.1	10.9	10.8	10.6	10.5	10.4	10.2	10.1	10.0	9.9	9.8	9.7	9.6	9.5	9.4
61																												12.1	11.9	11.7	11.6	11.4	11.3	11.1	11.0	10.8	10.7	10.6	10.5	10.4	10.3	10.1	10.0	9.9
62																												12.8	12.6	12.5	12.3	12.1	12.0	11.8	11.6	11.5	11.4	11.2	11.1	11.0	10.9	10.7	10.6	10.5
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3j is deleted.

Table 1-3k
PWR Fuel Qualification Table for 1.5 kW per Fuel Assembly for the NUHOMS® 24PTH-S-LC and 32PTH1 DSCs

(Minimum required years of cooling time after reactor core discharge for fuel with 380 kgU per Fuel Assembly)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																											
GWd/MTU	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
21					2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
22					2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
23					2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
24					2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
25					2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26					2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
27					2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28					2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
29					2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
30					2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
31					2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2
32					2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
33					2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3
34					3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
35					3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4
36					3.1	3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
37					3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5
38					3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6
39					3.3	3.3	3.3	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6
40					3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
41					3.5	3.5	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7
42					3.6	3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8
43					3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
44					3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9
45					3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0
46																					3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1
47																					3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1
48																					3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2
49																							3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3
50																							3.8	3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3
51																							3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4
52																							4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5
53																							4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6
54																							4.3	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7
55																							4.3	4.3	4.3	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7
56																							4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8
57																										4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9
58																										4.6	4.6	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0
59																										4.8	4.7	4.7	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1
60																										4.9	4.9	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2
61																												5.0	4.9	4.9	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4
62																												5.1	5.1	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

(continued)

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3k
PWR Fuel Qualification Table for 1.5 kW per Fuel Assembly for the NUHOMS® 24PTH-S-LC and 32PTH1 DSCs

(Minimum required years of cooling time after reactor core discharge for fuel with 475 kgU per Fuel Assembly)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																											
GWd/MTU	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
21					2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
22					2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1
23					2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
24					2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2
25					2.8	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
26					2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3
27					2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4
28					3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
29					3.1	3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5
30					3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6
31					3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
32					3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7
33					3.5	3.5	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8
34					3.6	3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
35					3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9
36					3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0
37					3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1
38					4.0	4.0	4.0	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
39					4.1	4.1	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2
40					4.2	4.2	4.2	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3
41					4.4	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4
42					4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4
43					4.7	4.6	4.6	4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.5
44					4.8	4.8	4.7	4.7	4.6	4.6	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.6	3.6
45					5.0	5.0	4.9	4.8	4.8	4.7	4.7	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.8	3.7	3.7
46																					4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.8	3.8
47																					4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	4.0	3.9	3.9
48																					4.7	4.7	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0
49																							4.8	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1
50																							4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.3
51																							5.1	5.0	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.5	4.4	4.4	4.4
52																							5.3	5.2	5.2	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.5	4.5
53																							5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.6
54																							5.7	5.6	5.6	5.5	5.4	5.4	5.3	5.3	5.3	5.2	5.2	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.8
55																							5.8	5.8	5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.9
56																							6.1	6.0	5.9	5.9	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.3	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.0
57																										6.1	6.0	6.0	5.9	5.9	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.4	5.3	5.3	5.3	5.2
58																										6.4	6.3	6.2	6.1	6.1	6.0	6.0	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.6	5.5	5.5	5.4	5.4
59																										6.6	6.5	6.5	6.4	6.3	6.3	6.2	6.1	6.1	6.0	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6
60																										6.9	6.8	6.7	6.7	6.6	6.5	6.4	6.4	6.3	6.2	6.2	6.1	6.1	6.0	6.0	5.9	5.9	5.8	5.8
61																												7.0	6.9	6.9	6.8	6.7	6.6	6.6	6.5	6.4	6.4	6.3	6.3	6.2	6.1	6.1	6.0	6.0
62																												7.3	7.2	7.2	7.1	7.0	6.9	6.8	6.8	6.7	6.6	6.6	6.5	6.4	6.4	6.3	6.3	6.2
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

(continued)

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3k
PWR Fuel Qualification Table for 1.5 kW per Fuel Assembly for the NUHOMS® 24PTH-S-LC and 32PTH1 DSCs

(Minimum required years of cooling time after reactor core discharge for fuel with 492 kgU per Fuel Assembly)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																											
GWd/MTU	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
21					2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1
22					2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
23					2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2
24					2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
25					2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3
26					2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4
27					3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
28					3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5
29					3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6
30					3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
31					3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7
32					3.5	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8
33					3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
34					3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9
35					3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0
36					3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1
37					4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
38					4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
39					4.2	4.2	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.3
40					4.3	4.3	4.3	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4
41					4.5	4.4	4.4	4.4	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.4
42					4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.5
43					4.8	4.8	4.7	4.7	4.6	4.6	4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7	3.7	3.6	3.6
44					5.0	4.9	4.9	4.8	4.8	4.7	4.7	4.6	4.6	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.7	3.7
45					5.2	5.1	5.1	5.0	4.9	4.9	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.8	3.8
46																					4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.0	4.0	4.0	4.0	4.0	3.9
47																					4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.0
48																					4.8	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.2
49																							4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.3
50																							5.1	5.0	5.0	5.0	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4
51																							5.3	5.2	5.2	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.5
52																							5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.8	4.8	4.7	4.7	4.7
53																							5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.8	4.8
54																							5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.2	5.1	5.1	5.1	5.0	5.0	5.0
55																							6.1	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.3	5.3	5.3	5.2	5.2	5.1	5.1	5.1
56																							6.3	6.3	6.2	6.1	6.1	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.4	5.3	5.3	5.3
57																										6.4	6.3	6.2	6.2	6.1	6.0	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.6	5.5	5.5	5.4
58																										6.7	6.6	6.5	6.4	6.4	6.3	6.2	6.2	6.1	6.1	6.0	5.9	5.9	5.9	5.8	5.8	5.7	5.7	5.6
59																										6.9	6.9	6.8	6.7	6.6	6.6	6.5	6.4	6.4	6.3	6.2	6.2	6.1	6.1	6.0	6.0	5.9	5.9	5.8
60																										7.3	7.2	7.1	7.0	6.9	6.8	6.8	6.7	6.6	6.6	6.5	6.4	6.4	6.3	6.3	6.2	6.2	6.1	6.1
61																												7.4	7.3	7.2	7.1	7.1	7.0	6.9	6.8	6.8	6.7	6.6	6.6	6.5	6.5	6.4	6.4	6.3
62																												7.7	7.6	7.6	7.5	7.4	7.3	7.2	7.1	7.1	7.0	6.9	6.9	6.8	6.7	6.7	6.6	6.6
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3l is deleted.

Table 1-3m
PWR Fuel Qualification Table for 2.0 kW per Fuel Assembly for the NUHOMS® 24PTH-S/-L DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 380 kgU per Fuel Assembly)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																											
GWd/MTU	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
21					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
22					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
23					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
24					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
25					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
27					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
29					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
30					2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31					2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
32					2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
33					2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
34					2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
35					2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
36					2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
37					2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
38					2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
39					2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
40					2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0
41					2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
42					2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1
43					2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
44					2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2
45					2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
46																					2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3
47																					2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
48																					2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4
49																							2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
50																							2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5
51																							2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6
52																							3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6
53																							3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
54																							3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7
55																							3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7
56																							3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8
57																										3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9
58																										3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9
59																										3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0
60																										3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0
61																												3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1
62																												3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

(continued)

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3m
PWR Fuel Qualification Table for 2.0 kW per Fuel Assembly for the NUHOMS® 24PTH-S/-L DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 475 kgU per Fuel Assembly)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																											
GWd/MTU	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
21					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
22					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
23					2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
24					2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
25					2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26					2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
27					2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28					2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
29					2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
30					2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0
31					2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
32					2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1
33					2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
34					2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2
35					2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
36					2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3
37					3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
38					3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4
39					3.1	3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4
40					3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5
41					3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
42					3.4	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6
43					3.5	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7
44					3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7
45					3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8
46																					3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9
47																					3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9
48																					3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0
49																							3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1
50																							3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1
51																							3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2
52																							3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3
53																							3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3
54																							3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4
55																							4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5
56																							4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5
57																										4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6
58																										4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7
59																										4.4	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8
60																										4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9	3.9
61																												4.5	4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0
62																												4.7	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

(continued)

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3m
PWR Fuel Qualification Table for 2.0 kW per Fuel Assembly for the NUHOMS® 24PTH-S/-L DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 492 kgU per Fuel Assembly)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																											
GWd/MTU	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
21					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
22					2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
23					2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
24					2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
25					2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26					2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
27					2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28					2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
29					2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0
30					2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
31					2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1
32					2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
33					2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2
34					2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
35					2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3
36					3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4
37					3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4
38					3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5
39					3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5
40					3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
41					3.4	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6
42					3.5	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
43					3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
44					3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8
45					3.7	3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9
46																					3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9
47																					3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0
48																					3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1
49																							3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.1
50																							3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2
51																							3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3
52																							3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4
53																							4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4
54																							4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6	3.5	3.5
55																							4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.6
56																							4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.7
57																										4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7
58																										4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.8
59																										4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.1	4.1	4.1	4.0	4.0	4.0	4.0	3.9
60																										4.7	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1
61																												4.7	4.7	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.2	4.2	4.2	4.2
62																												4.9	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3n
PWR Fuel Qualification Table for 2.2 kW per Fuel Assembly for the NUHOMS® 32PT DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 380 kgU per Fuel Assembly)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																											
GWd/MTU	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
21					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
22					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
23					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
24					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
25					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
27					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
29					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
30					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
32					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
33					2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
34					2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
35					2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
36					2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
37					2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
38					2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
39					2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
40					2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
41					2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
42					2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
43					2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
44					2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0
45					2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
46																					2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1
47																					2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1
48																					2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2
49																							2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2
50																							2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3
51																							2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3
52																							2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4
53																							2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4
54																							2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5
55																							2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5
56																							2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5
57																										2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6
58																										3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6
59																										3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7
60																										3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7
61																												3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8
62																												3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

(continued)

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3n
PWR Fuel Qualification Table for 2.2 kW per Fuel Assembly for the NUHOMS® 32PT DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 475 kgU per Fuel Assembly)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																											
GWd/MTU	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
21					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
22					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
23					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
24					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
25					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26					2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
27					2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28					2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
29					2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
30					2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31					2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
32					2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
33					2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0
34					2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0
35					2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
36					2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1
37					2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
38					2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2
39					2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2
40					2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3
41					3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3
42					3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4
43					3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4
44					3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5
45					3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
46																					3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6
47																					3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7
48																					3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7
49																							3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8
50																							3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8
51																							3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9
52																							3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0
53																							3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0
54																							3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1
55																							3.6	3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1
56																							3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2
57																										3.7	3.7	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3
58																										3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3
59																										3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4
60																										4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5
61																												4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7	3.6	3.6	3.6
62																												4.1	4.1	4.1	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3o
PWR Fuel Qualification Table for 2.5 kW per Fuel Assembly for the NUHOMS® 24PTH-S/-L DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 380 kgU per Fuel Assembly)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																											
GWd/MTU	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
21					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
22					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
23					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
24					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
25					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
27					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
29					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
30					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
32					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
33					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
34					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
35					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
36					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
37					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
38					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
39					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
40					2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
41					2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
42					2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
43					2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
44					2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
45					2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
46																					2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
47																					2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
48																					2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
49																							2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
50																							2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0
51																							2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0
52																							2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
53																							2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1
54																							2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
55																							2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
56																							2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2
57																										2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
58																										2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3
59																										2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3
60																										2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4
61																												2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4
62																												2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

(continued)

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3o
PWR Fuel Qualification Table for 2.5 kW per Fuel Assembly for the NUHOMS® 24PTH-S/-L DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 475 kgU per Fuel Assembly)

BU GWd/MTU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																										
	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
21					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
22					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
23					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
24					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
25					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
27					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
29					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
30					2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31					2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
32					2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
33					2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
34					2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
35					2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
36					2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
37					2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
38					2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
39					2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
40					2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0
41					2.7	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
42					2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1
43					2.8	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
44					2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2
45					2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
46																					2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3
47																					2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
48																					2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4
49																							2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
50																							2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5
51																							2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
52																							3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6
53																							3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7
54																							3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7
55																							3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7
56																							3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8
57																										3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8
58																										3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9
59																										3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0
60																										3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0
61																												3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1
62																												3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

(continued)

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3o
PWR Fuel Qualification Table for 2.5 kW per Fuel Assembly for the NUHOMS® 24PTH-S/-L DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 492 kgU per Fuel Assembly)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																											
GWd/MTU	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
21					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
22					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
23					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
24					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
25					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
26					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
27					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
28					2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
29					2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
30					2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31					2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
32					2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
33					2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
34					2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
35					2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
36					2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
37					2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0
38					2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0
39					2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0
40					2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
41					2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1
42					2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2
43					2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2
44					2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3
45					3.0	3.0	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3
46																					2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4
47																					2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4
48																					2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5
49																							2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5
50																							2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6
51																							3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6
52																							3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7
53																							3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7
54																							3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8	2.8
55																							3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8
56																							3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.9	2.9	2.9
57																										3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0	3.0	3.0	3.0	2.9
58																										3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.0
59																										3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1
60																										3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2	3.1
61																												3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3	3.2	3.2	3.2
62																												3.7	3.6	3.6	3.6	3.6	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.3	3.3	3.3	3.3
Enr. wt. %	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0

Note: The pages that follow Table 1-3p provide the explanatory notes and limitations regarding the use of this table.

Table 1-3p
PWR Fuel Qualification Table for 0.2 to 0.6 wt.% U-235 for the NUHOMS® 24PTH, 32PT, 32PTH1, and 37PTH DSCs

(Minimum required years of cooling time after reactor core discharge)

	380 kgU																								
Dec. Heat	1.2 kW/FA (37PTH)					1.5 kW/FA (24PTH-S-LC, 32PTH1)					2.0 kW/FA (24PTH-S/-L)					2.2 kW/FA (32PT)					2.5 kW/FA (24PTH-S/-L)				
Burn-up, GWD/MTU	Enrichment, wt.%					Enrichment, wt.%					Enrichment, wt.%					Enrichment, wt.%					Enrichment, wt.%				
	0.2	0.3	0.4	0.5	0.6	0.2	0.3	0.4	0.5	0.6	0.2	0.3	0.4	0.5	0.6	0.2	0.3	0.4	0.5	0.6	0.2	0.3	0.4	0.5	0.6
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.3	2.2	2.2	2.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.3	2.3	2.3	2.3	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.4	2.4	2.4	2.4	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.5	2.5	2.5	2.4	2.4	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	2.6	2.6	2.5	2.5	2.5	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

	475 kgU																								
Dec. Heat	1.2 kW/FA (37PTH)					1.5 kW/FA (24PTH-S-LC, 32PTH1)					2.0 kW/FA (24PTH-S/-L)					2.2 kW/FA (32PT)					2.5 kW/FA (24PTH-S/-L)				
Burn-up, GWD/MTU	Enrichment, wt.%					Enrichment, wt.%					Enrichment, wt.%					Enrichment, wt.%					Enrichment, wt.%				
	0.2	0.3	0.4	0.5	0.6	0.2	0.3	0.4	0.5	0.6	0.2	0.3	0.4	0.5	0.6	0.2	0.3	0.4	0.5	0.6	0.2	0.3	0.4	0.5	0.6
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
11	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
13	2.3	2.3	2.3	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
14	2.4	2.4	2.4	2.4	2.3	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
15	2.5	2.5	2.5	2.5	2.4	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
16	2.6	2.6	2.6	2.6	2.6	2.2	2.2	2.2	2.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
17	2.8	2.7	2.7	2.7	2.7	2.3	2.3	2.3	2.3	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
18	2.8	2.8	2.8	2.8	2.8	2.4	2.4	2.4	2.4	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
19	2.9	2.9	2.9	2.9	2.8	2.5	2.5	2.5	2.4	2.4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
20	3.0	3.0	3.0	3.0	2.9	2.6	2.6	2.5	2.5	2.5	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

	492 kgU																								
Dec. Heat	1.2 kW/FA (37PTH)					1.5 kW/FA (24PTH-S-LC, 32PTH1)					2.0 kW/FA (24PTH-S/-L)					2.2 kW/FA (32PT)					2.5 kW/FA (24PTH-S/-L)				
Burn-up, GWD/MTU	Enrichment, wt.%					Enrichment, wt.%					Enrichment, wt.%					Enrichment, wt.%					Enrichment, wt.%				
	0.2	0.3	0.4	0.5	0.6	0.2	0.3	0.4	0.5	0.6	0.2	0.3	0.4	0.5	0.6	0.2	0.3	0.4	0.5	0.6	0.2	0.3	0.4	0.5	0.6
10	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	-	-	-	-	-	2.0	2.0	2.0	2.0	2.0
11	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	-	-	-	-	-	2.0	2.0	2.0	2.0	2.0
12	2.3	2.3	2.2	2.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	-	-	-	-	-	2.0	2.0	2.0	2.0	2.0
13	2.4	2.4	2.3	2.3	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	-	-	-	-	-	2.0	2.0	2.0	2.0	2.0
14	2.5	2.5	2.5	2.4	2.4	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	-	-	-	-	-	2.0	2.0	2.0	2.0	2.0
15	2.6	2.6	2.6	2.5	2.5	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	-	-	-	-	-	2.0	2.0	2.0	2.0	2.0
16	2.7	2.7	2.7	2.6	2.6	2.3	2.3	2.3	2.2	2.2	2.0	2.0	2.0	2.0	2.0	-	-	-	-	-	2.0	2.0	2.0	2.0	2.0
17	2.8	2.8	2.8	2.7	2.7	2.4	2.4	2.3	2.3	2.3	2.0	2.0	2.0	2.0	2.0	-	-	-	-	-	2.0	2.0	2.0	2.0	2.0
18	2.9	2.9	2.9	2.8	2.8	2.5	2.5	2.4	2.4	2.4	2.0	2.0	2.0	2.0	2.0	-	-	-	-	-	2.0	2.0	2.0	2.0	2.0
19	3.0	3.0	3.0	2.9	2.9	2.6	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0	2.0	-	-	-	-	-	2.0	2.0	2.0	2.0	2.0
20	3.1	3.1	3.1	3.0	3.0	2.7	2.6	2.6	2.6	2.6	2.1	2.1	2.1	2.1	2.0	-	-	-	-	-	2.0	2.0	2.0	2.0	2.0

Notes: Tables 1-3i, 1-3k, and 1-3m through 1-3p:

Note A: General Notes

- These tables apply to the 24PTH, 32PT, 32PTH1, and 37PTH DSCs, as indicated in the table headings. Refer to the heat load zoning configuration figures for each DSC for a description of allowable heat loads (see Note B).
- BU = Assembly Average burnup.
- Use burnup and enrichment to look up minimum cooling time in years. Licensee is responsible for ensuring that uncertainties in fuel enrichment and burnup are correctly accounted for during fuel qualification.
- Round burnup UP to next higher entry, round enrichments DOWN to next lower entry.
- Fuel with an assembly average initial enrichment less than 0.2 wt.% U-235 or greater than 5.0 wt.% U-235 is unacceptable for storage.
- Fuel with a burnup greater than 62 GWd/MTU is unacceptable for storage.
- Fuel with a burnup less than 10 GWd/MTU is acceptable for storage after 2.0 years cooling.
- These tables are applicable to fuel assemblies with or without control components.
- The cooling times for failed, damaged, and intact assemblies are identical.
- For fuel assemblies containing BLEU fuel pellets, add 3.0 years of additional cooling time.
- For each fuel assembly heat load, tables are provided for uranium loadings of 380 kgU, 475 kgU, and 492 kgU. Use an FQT table with a uranium loading that exceeds the fuel assembly uranium loading. (Note that the 492 kgU tables are not applicable to the 32PT DSC.) Optionally, cooling times may be interpolated between tables based on the fuel assembly uranium loading, as described in Note C below.
- The gray shaded areas of the tables represent unanalyzed regions. Limited interpolation of cooling times into the unanalyzed regions may be performed, as described in Note D below.
- Requirements for reconstituted fuel assemblies are described in Note E below.

Note B: DSC Specific Notes

- 24PTH DSC heat load zoning configurations are defined in Figures 1-11 through 1-15a.
- 32PT DSC heat load zoning configurations are defined in Figures 1-2 through 1-4a.
- 32PTH1 DSC heat load zoning configurations are defined in Figures 1-26 through 1-28c.
- 37PTH DSC heat load zoning configurations are defined in Figures 1-39 and 1-40.
- 24PTH DSC: WE 15x15 PLSAs shall be limited to a minimum assembly average enrichment of 1.2 wt.% U-235.
- 32PT DSC: The maximum basket assembly average burnup is limited to 55 GWd/MTU (individual fuel assemblies are limited to 62 GWd/MTU).
- 32PTH1 DSC: Failed fuel is limited to 250 kgU.

Note C: Interpolation of Cooling Times based on Uranium Loading

If the fuel assembly uranium loading kgU_{new} falls within the range $kgU_{low} < kgU_{new} < kgU_{high}$, where kgU_{low} and kgU_{high} represent the uranium loadings of the fuel qualification tables, cooling times may be interpolated between fuel qualification tables using the following equation:

$$CT_{new} = \frac{CT_{high}*\ \ln(kgU_{new}/kgU_{low}) + CT_{low}*\ [\ln(kgU_{high}/kgU_{low}) - \ln(kgU_{new}/kgU_{low})]}{\ln(kgU_{high}/kgU_{low})}$$

In this equation, CT_{low} and CT_{high} correspond to the cooling times in the fuel qualification tables for the low and high uranium loadings.

Because fuel qualification tables are available for 380 kgU, 475 kgU, and 492 kgU, interpolation may be performed either between the 380 kgU and 475 kgU tables or between the 475 kgU and 492 kgU tables. The fitting equation solution shall be rounded up to the nearest 0.1 years.

The above equation may be simplified for the two interpolation regions.

For 380 kgU < kgU_{new} < 475 kgU, $CT_{new} = 4.4814*[CT_{high}*\ln(kgU_{new}/380) – CT_{low}*\ln(kgU_{new}/475)]$

For 475 kgU < kgU_{new} < 492 kgU, $CT_{new} = 28.4382*[CT_{high}*\ln(kgU_{new}/475) – CT_{low}*\ln(kgU_{new}/492)]$

Note that the 475 kgU < kgU_{new} < 492 kgU equation does not apply to the 32PT DSC, which is limited to 475 kgU.

Examples of cooling time interpolation are provided in the UFSAR, Section 7.2.3.2.

Note D: Extrapolation into Unanalyzed Region

Limited extrapolation of FQT cooling times into the unanalyzed regions is allowed. The extrapolation may be performed for a maximum difference of 4 GWd/MTU in burnup or 0.4 wt.% in enrichment. The extrapolation may be performed for either fixed enrichment (variable burnup, fixed FQT column) or fixed burnup (variable enrichment, fixed FQT row). The methodology is:

- Perform a regression analysis on the FQT cooling times and associated variable (either burnup or enrichment). Note: All FQT cooling times in either the row or column of data being extrapolated shall be used, even if many of the cooling times are the same.
- Develop a fitting equation for the data. A fourth-order polynomial with parameters having at least six significant digits to avoid rounding errors is recommended.
- Use the fitting equation to compute the extrapolated cooling time at the desired enrichment or burnup.
- Add 0.2 years as additional margin.

An example application of the extrapolation methodology is provided in the UFSAR, Section M.5.2.6.

Alternately, the required cooling time in the unanalyzed region may be explicitly determined using the fuel qualification methodology documented in the UFSAR.

Note E: Requirements for Reconstituted Fuel Assemblies

- For reconstituted fuel assemblies with UO_2 rods and/or Zr rods or Zr pellets and/or stainless steel rods, use the assembly average equivalent enrichment to determine the minimum cooling time.
- For irradiated stainless steel rods, the following extra cooling times are required:
  - 24PTH/32PTH1/37PTH DSCs: For ≤ 10 reconstituted rods, add an additional 1 year of cooling time if the FQT cooling time is < 10 years. Alternatively, the licensee can qualify fuel assemblies with fewer than the maximum number of irradiated stainless steel rods and reduce cooling time requirements.
  - 32PT DSC: For ≤ 10 reconstituted rods, add an additional 1.5 years of cooling time; for 11 to 56 reconstituted rods, add an additional 6 years of cooling time. Alternatively, the licensee can qualify fuel assemblies with fewer than the maximum number of irradiated stainless steel rods and reduce cooling time requirements.

Tables 1-4a through 1-4d are deleted.

Table 1-4e
BWR Fuel Qualification Table for the NUHOMS®-61BTH Type 1 DSC in the Standardized HSM

(Minimum required years of cooling time after reactor core discharge for fuel with 198 kgU per FA)

BU GWd/MTU	Assembly Average Initial Enrichment (wt. % U-235)																																
	0.9	1.2	1.5	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
15	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
20	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
23	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
25	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
28	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
30	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
32				4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
34				4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
36				4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
38				4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
39				5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
40						5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
41										5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
42										5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
43										5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5
44										5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
45										5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
46										6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
47										6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0
48										6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
49										6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5
50										6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5
51										7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
52										7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0
53										7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
54										8.0	7.5	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5
55										8.0	8.0	8.0	8.0	8.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5
56										8.5	8.5	8.0	8.0	8.0	8.0	8.0	8.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0
57										9.0	8.5	8.5	8.5	8.5	8.5	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
58										9.0	9.0	9.0	9.0	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.5	7.5	7.5	7.5
59										9.5	9.5	9.5	9.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.5	8.5	8.5	8.5	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
60										10.0	10.0	10.0	9.5	9.5	9.5	9.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.0
61										10.5	10.5	10.5	10.0	10.0	10.0	10.0	10.0	9.5	9.5	9.5	9.5	9.5	9.5	9.0	9.0	9.0	9.0	9.0	8.5	8.5	8.5	8.5	8.5	8.5
62										11.0	11.0	10.5	10.5	10.5	10.5	10.5	10.0	10.0	10.0	10.0	10.0	9.5	9.5	9.5	9.5	9.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0

(continued)

Note: For burnups ≤ 20 GWd/MTU and enrichments between 0.5 and 0.9 wt. % U-235, the minimum cooling time is 3 years.

Table 1-4e
BWR Fuel Qualification Table for the NUHOMS®-61BTH Type 1 DSC in the Standardized HSM

(Minimum required years of cooling time after reactor core discharge for fuel with 170 kgU per FA)

BU	Assembly Average Initial U-235 Enrichment, wt. %																																							
GWd/MTU	0.9	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
15	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
20	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
23	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
25	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
28	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
30	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
32							4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
34							4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
36									4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
38									4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5
39									4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
40												4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
41																4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
42																4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
43																5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
44																5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
45																5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
46																5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
47																5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
48																5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5
49																5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
50																5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
51																6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
52																6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0
53																6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
54																6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
55																6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5
56																7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
57																7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
58																7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0
59																7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
60																8.5	8.0	8.0	8.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5
61																9.5	8.5	8.0	8.0	8.0	8.0	8.0	8.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
62																10.0	9.5	9.0	8.5	8.5	8.5	8.5	8.0	8.0	8.0	8.0	8.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0

Note: For burnups ≤ 20 GWd/MTU and enrichments between 0.5 and 0.9 wt. % U-235, the minimum cooling time is 3 years.

Notes: Table 1-4e:

- BU = Assembly Average burnup.
- Use burnup and enrichment to look up minimum cooling time in years.
- To determine the minimum required cooling time for fuel with 198 kgU/FA, use the sections of the Fuel Qualification Tables labelled "Minimum required years of cooling time after reactor core discharge for Fuel with 198 kgU per FA."
- To determine the minimum required cooling time for fuel with up to 170 kgU/FA, use the sections of the Fuel Qualification Tables labelled "Minimum required years of cooling time after reactor core discharge for fuel with 170 kgU per FA."
- To determine the minimum required cooling time for fuel with greater than 170 kgU/FA up to 198 kgU/FA, two options are available. Either use the sections of the Fuel Qualification Tables labelled "Minimum required years of cooling time after reactor core discharge for fuel with 198 kgU per FA," or use the following fitting equation: $CT_{new} = 6.56 * [(\ln(kgU_{new}) – 5.13) * CT_{high} - (\ln(kgU_{new}) - 5.28) * CTlow]$, where kgU_{new} is the mass of the FA in question between 170 and 198 kgU, CT_{high} is the cooling time looked up from the 198 kgU per FA FQTs, and CT_{low} is the cooling time looked up from the 170 kgU per FA FQTs. To use the fitting equation, the Burnup, wt. % U235, and the decay heat zone value must be identical for the 170 kgU FA, the 198 kgU FA, and the FA in question between 170 and 198 kgU/FA, and the fitting equation solution shall be rounded up to the next higher single decimal place.
- Round burnup UP to next higher entry, round enrichments DOWN to next lower entry.
- Fuel with a lattice average initial enrichment greater than 5.0 wt.% U-235 is unacceptable for storage.
- Fuel with a burnup greater than 62 GWd/MTU is unacceptable for storage.
- For reconstituted fuel assemblies with UO_2 rods and/or Zr rods or Zr pellets and/or stainless steel rods, use the lattice average equivalent enrichment to determine the minimum cooling time.
- The cooling times for failed, damaged, and intact assemblies are identical.
- For fuel assemblies containing BLEU fuel pellets, add 3.0 years of additional cooling time to the values shown in Tables 1-4e.
- If 10 irradiated stainless steel rods are present in the reconstituted fuel assembly, add an additional 5.0 years of cooling time to the value shown in the table. Alternately, the licensee can qualify fuel assemblies with fewer than the 10 irradiated stainless steel rods and reduce the cooling time requirement.

<u>Extrapolation into Unanalyzed Region</u>

The gray-shaded areas of the tables represent unanalyzed regions. Limitations for loading UF in the unanalyzed regions are specified in Table 1-1t. Limited extrapolation of FQT cooling times into the unanalyzed regions is allowed. The extrapolation may be performed for a maximum difference of 4 GWd/MTU in burnup or 0.4 wt.% in enrichment. The extrapolation may be performed for either fixed enrichment (variable burnup, fixed FQT column) or fixed burnup (variable enrichment, fixed FQT row). The methodology is:

1. Perform a regression analysis on the FQT cooling times and associated variable (either burnup or enrichment). Note: All FQT cooling times in either the row or column of data being extrapolated shall be used, even if many of the cooling times are the same.
2. Develop a fitting equation for the data. A fourth-order polynomial with parameters having at least six significant digits to avoid rounding errors is recommended.
3. Use the fitting equation to compute the extrapolated cooling time at the desired enrichment or burnup.
4. Add 0.2 years as additional margin.

An example application of the extrapolation methodology is provided in the UFSAR, Section T.5.2.
Alternately, the required cooling time in the unanalyzed region may be explicitly determined using the fuel qualification methodology documented in the UFSAR.

Table 1-4f
BWR Fuel Qualification Table for the NUHOMS®-61BTH DSC in the HSM-H

(Minimum required years of cooling time after reactor core discharge)

Burn-Up, GWD/MTU	Assembly Averaged Initial U-235 Enrichment, wt.%																
	0.7	0.9	1.5	1.7	2.5	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	5.0
6	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
7		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
19		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
30			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
35				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
40					1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
45						1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
46						1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
47							1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
48								1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
49								1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
50									1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
51									1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
52										1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
53											1.15	1.15	1.15	1.15	1.15	1.15	1.15
54											1.20	1.20	1.20	1.20	1.20	1.20	1.20
55												1.20	1.20	1.20	1.20	1.20	1.20
56													1.25	1.25	1.25	1.25	1.25
57													1.25	1.25	1.25	1.25	1.25
58														1.25	1.25	1.25	1.25
59														1.30	1.30	1.30	1.30
60															1.30	1.30	1.30
61																1.30	1.30
62																1.30	1.30
Enr. wt.%	0.7	0.9	1.5	1.7	2.5	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	5.0

Notes on Table 1-4f:

1. Use assembly average burnup (BU_{avg}) to look up minimum cooling time in years. Round burnup up to the next whole number. For example, 47.1 GWd/MTU rounds up to 48 GWd/MTU.
2. Fuel in the gray shaded region is UF. An additional cooling time penalty of 0.2 years is applied for UF. Alternately, the required cooling time in the unanalyzed region may be explicitly determined using the fuel qualification methodology documented in the UFSAR. Restrictions on the number and location of UF are provided in Table 1-1t. The lower enrichment boundary for a burnup not shown on the table may be computed as BU/20 in the range 20 GWd/MTU ≤ BU ≤ 3 5 GWd/MTU and as BU/16 in the range 36 GWd/MTU ≤ BU ≤ 62 GWd/MTU. Round enrichment down to the nearest 0.1%. (Example: 62/16 = 3.875%, round down to 3.8%).
3. Fuel with an assembly average burnup greater than 62 GWd/MTU or an assembly average initial enrichment greater than 5.0% is unacceptable for storage.
4. The cooling times for intact, damaged, and failed assemblies are identical.
5. For fuel assemblies containing BLEU fuel pellets, add 3.0 years of additional cooling time.
6. If 10 irradiated stainless steel rods are present in the reconstituted fuel assembly, add an additional 5.0 years of cooling time to the value shown in the table. Alternately, the Licensee can qualify fuel assemblies with fewer than 10 irradiated stainless steel rods and reduce the cooling time requirement. For reconstituted fuel assemblies with UO2 rods and/or Zr rods or Zr pellets, no cooling time penalty is required.
7. This table applies to both the Type 1 and Type 2 DSC.

Tables 1-4g through 1-4h are deleted.

Table 1-4i
Deleted

Tables 1-5a through 1-5g are deleted.

Table 1-6a
Fuel Qualification Table for 0.3 kW BWR FAs in Zone 1 of a NUHOMS®-61BT DSC Contained in an OS197L TC

(Minimum required years of cooling time after reactor core discharge)

BU GWd/MTU	Assembly Average Initial Enrichment (wt. % U-235)																													
	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4
10	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
15	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
20	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
25	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4
28					6	6	6	6	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5
30					7	7	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
32					8	8	8	8	8	7	7	7	7	7	7	7	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6
34					9	9	9	9	9	9	8	8	8	8	8	8	8	8	8	7	7	7	7	7	7	7	7	7	7	7	7
36	**Not Analyzed Domain**				11	11	11	10	10	10	10	10	9	9	9	9	9	9	9	9	8	8	8	8	8	8	8	8	8	8	8
38					14	13	13	12	12	12	12	11	11	11	11	11	10	10	10	10	10	10	9	9	9	9	9	9	9	9	9
39					15	14	14	14	13	13	13	12	12	12	12	11	11	11	11	11	10	10	10	10	10	10	10	9	9	9	9
40					16	16	15	15	15	14	14	14	13	13	13	12	12	12	12	12	11	11	11	11	11	10	10	10	10	10	10

Notes for Tables 1-6a and 1-6b:

- BU = Assembly average burnup
- Use burnup and enrichment to look up minimum cooling time in years. Licensee is responsible for ensuring that uncertainties in fuel enrichment and burnup are conservatively applied in determination of actual values for these two parameters.
- Round burnup UP to next higher entry, round enrichments DOWN to next lower entry.
- Fuel with an initial enrichment less than 1.4 and greater than 4.4 wt. % U-235 is unacceptable for storage.
- Fuel with a burnup greater than 40 GWd/MTU is unacceptable for storage.
- Fuel with a burnup less than 10 GWd/MTU is acceptable for storage after four-years cooling.
- For fuel assemblies containing BLEU fuel pellets, add 3.0 years of additional cooling time to the values shown in these tables.
- Example: An assembly with an initial enrichment of 3.75 wt. % U-235 and a burnup of 39.5 GWd/MTU is acceptable for storage in Zone 1 locations after a cooling time of 11 years (per Table 1-6a) and in Zone 2 locations after a cooling time of 37.5 years (per Table 1-6b) as defined by 3.7 wt. % U-235 (rounding down) and 40 GWd/MTU (rounding up) on these fuel qualification tables.

Table 1-6b
Fuel Qualification Table for 0.17 kW BWR FAs in Zone 2 of a NUHOMS®-61BT DSC Contained in an OS197L TC

(Minimum required years of cooling time after reactor core discharge)

BU GWd/MTU	Assembly Average Initial Enrichment (wt. % U-235)																													
	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4
10	21.5	20.5	20.5	20.5	20.5	19.5	19.5	19.5	19.5	19.5	19.5	18.5	18.5	18.5	18.5	18.5	18.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
11	22.0	22.0	22.0	22.0	21.0	21.0	21.0	21.0	21.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
12	23.0	23.0	23.0	23.0	22.0	22.0	22.0	22.0	22.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
13	24.0	24.0	24.0	23.0	23.0	23.0	23.0	23.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
14	25.0	25.0	25.0	24.0	24.0	24.0	24.0	24.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
15	26.0	26.0	25.0	25.0	25.0	25.0	25.0	25.0	24.0	24.0	24.0	24.0	24.0	24.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
16	27.0	26.0	26.0	26.0	26.0	26.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
17	27.0	27.0	27.0	27.0	27.0	26.0	26.0	26.0	26.0	26.0	26.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	23.0
18	28.0	28.0	27.0	27.0	27.0	27.0	27.0	27.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
19	28.0	28.0	28.0	28.0	28.0	28.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
20	29.0	29.0	29.0	29.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0
21	30.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	26.0	26.0	26.0	26.0
22	30.0	30.0	30.0	30.0	30.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
23	30.5	30.5	30.5	30.5	30.5	30.5	30.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	27.5	27.5	27.5	27.5
24	31.5	31.5	31.5	31.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5
25	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5
26					31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	29.5	29.5	29.5	29.5	29.5
27					32.5	32.5	32.5	32.5	32.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5
28					32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	30.5
29					33.5	33.5	33.5	33.5	33.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5
30					33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5
31					34.5	34.5	34.5	34.5	34.5	34.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	32.5	32.5	32.5	32.5	32.5
32					34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
33	**Not Analyzed Domain**				35.5	35.5	35.5	35.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	33.5	33.5	33.5	33.5	33.5
34					35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5
35					35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	34.5	34.5	34.5	34.5	34.5	34.5
36					36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5
37					36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5
38					37.5	37.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5
39					37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5
40					37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5

Note: The explanatory notes and limitations provided for Table 1-6a are also applicable for this table.

Table 1-6c
Fuel Qualification Table for 0.6 kW PWR FAs in Zone 1 of a NUHOMS®-32PT DSC Contained in an OS197L TC
(Fuel with or without CCs)

(Minimum required years of cooling time after reactor core discharge)

BU	Assembly Average Initial Enrichment (wt. % U-235)																																			
GWd/MTU	1.1	1.2	1.4	1.6	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
6	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
8	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
10	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
15	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
20	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
25	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0
28	8.0	8.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
30	9.0	9.0	9.0	9.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
32	10.5	10.5	9.5	9.5	9.5	9.5	9.5	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
34	12.0	12.0	12.0	11.5	11.0	11.0	11.0	11.0	11.0	11.0	11.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	9.0	9.0	9.0	9.0	9.0
36	14.5	14.5	14.0	14.0	13.5	13.5	13.0	13.0	13.0	13.0	13.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
38	17.5	17.5	16.5	16.5	16.5	16.0	16.0	15.5	15.5	15.0	15.0	15.0	15.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
39	19.5	19.0	18.5	18.0	17.0	16.5	16.5	16.5	16.5	16.0	16.0	16.0	16.0	16.0	16.0	16.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
40	20.5	20.0	20.0	19.0	19.0	18.5	18.5	18.5	18.0	18.0	18.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	15.0	15.0	15.0	15.0	15.0	15.0
41	22.5	21.5	21.0	21.0	20.0	20.0	19.5	19.5	19.5	19.0	19.0	19.0	19.0	19.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	16.0
42	24.0	22.5	22.5	21.5	21.5	21.5	21.0	21.0	21.0	21.0	21.0	20.0	20.0	20.0	20.0	20.0	20.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
43	25.0	24.5	24.5	23.5	23.5	23.0	22.0	22.0	22.0	21.5	21.5	21.5	21.0	21.0	21.0	21.0	21.0	21.0	21.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.0	19.0	19.0	19.0	19.0	19.0
44	26.5	26.5	25.0	25.0	24.0	24.0	24.0	24.0	23.5	23.5	23.5	23.0	23.0	23.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	20.0	20.0
45	27.5	27.5	27.0	26.0	26.0	25.0	25.0	25.0	25.0	24.5	24.5	24.5	24.0	24.0	24.0	24.0	24.0	24.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0

Note: The page that follows Table 1-6d provides the explanatory notes and limitations regarding the use of this table.

Table 1-6d
Fuel Qualification Table for 0.4 kW PWR FAs in Zone 2 of a NUHOMS®-32PT DSC Contained in an OS197L TC
(Fuel with or without CCs)

(Minimum required years of cooling time after reactor core discharge)

BU GWd/MTU	Assembly Average Initial Enrichment (wt. % U-235)																																						
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
11	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
12	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
13	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
14	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
15	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
16	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
17	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
18	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
19	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
20	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
21	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
22	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
23	18.0	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
24	18.0	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
25	18.5	18.0	18.0	18.0	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
26	19.0	18.5	18.5	18.0	18.0	18.0	18.0	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
27	19.5	19.0	19.0	19.0	18.5	18.5	18.5	18.0	18.0	18.0	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
28	19.0	19.0	19.0	18.5	18.5	18.5	18.5	18.0	18.0	18.0	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
29	19.5	19.5	19.5	19.5	19.5	19.5	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
30	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.0	20.0	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
31	23.5	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
32	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.0
33	28.0	28.0	27.5	27.5	27.5	27.5	27.5	27.0	27.0	27.0	27.0	27.0	27.0	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	25.5	25.5	25.5	25.5	25.5	25.5	25.5	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
34	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	28.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
35	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
36	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.0
37	34.5	34.5	34.5	34.5	34.5	34.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.0	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	31.5	31.5	31.5	31.5	31.5	31.5
38	36.0	36.0	36.0	35.5	35.5	35.5	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	34.5	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	33.0	33.0	33.0
39	37.5	37.5	37.5	37.5	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	35.0
40	39.5	39.0	39.0	39.0	39.0	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5	37.5
41	41.0	41.0	40.5	40.5	40.5	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0
42	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5	40.5	40.5	40.5	40.5	40.5	40.5	40.5	40.5
43	44.0	44.0	43.5	43.5	43.5	43.5	43.5	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
44	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
45	47.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5

Explanatory notes and limitations regarding the use of this table follow.

Notes for Tables 1-6c and 1-6d:

- BU = Assembly average burnup
- Use burnup and enrichment to look up minimum cooling time in years. Licensee is responsible for ensuring that uncertainties in fuel enrichment and burnup are correctly accounted for during fuel qualification.
- For fuel assemblies with CCs, increase the indicated cooling time by 1.5 years. This applies to 0.6 kW FAs only.
- For fuel assemblies reconstituted with up to 10 stainless steel rods, increase the indicated cooling time by 1.5 years. If more than 10 stainless steel rods are present, increase the indicated cooling time by 6 years.
- Round burnup UP to next higher entry, round enrichments DOWN to next lower entry.
- Fuel with an initial enrichment less than 1.1 and greater than 5.0 wt.% U-235 is unacceptable for storage.
- Fuel with a burnup greater than 45 GWd/MTU is unacceptable for storage.
- Fuel with a burnup less than 10 GWd/MTU is acceptable for storage after 5-years cooling.
- For fuel assemblies containing BLEU fuel pellets, add 3.0 years of additional cooling time to the values shown in Table 1-6c and Table 1-6d.

Example: An assembly with an initial enrichment of 3.75 wt. % U-235 and a burnup of 41.5 GWd/MTU is acceptable for storage in Zone 1 locations after a cooling time of 19 years (per Table 1-6c) and in Zone 2 locations after a cooling time of 41.5 years (per Table 1-6d) as defined by 3.7 wt. % U-235 (rounding down) and 42 GWd/MTU (rounding up) on these fuel qualification tables.

Tables 1-7a through 1-7j are deleted.

Table 1-7k
BWR Fuel Qualification Table for Fuel with 0.60 kW per FA for the NUHOMS®-69BTH DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 198 kgU per FA)

BU	Maximum Assembly Average Initial U-235 Enrichment, wt. %																																								
GWd/MTU	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
15	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
20	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
25	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
28	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
30	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
32									3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
34									4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
36											4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
38											4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
39											4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
40														5.5	5.5	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
41																		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
42																		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0
43																		5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
44																		5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
45																		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
46																		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5
47																		5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
48																		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
49																		6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
50																		6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0
51																		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
52																		6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
53																		6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5
54																		7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
55																		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
56																		7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0
57																		7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
58																		8.0	8.0	8.0	8.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5
59																		8.5	8.5	8.0	8.0	8.0	8.0	8.0	8.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
60																		9.0	8.5	8.5	8.5	8.5	8.5	8.0	8.0	8.0	8.0	8.0	8.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0
61																		9.0	9.0	9.0	9.0	9.0	8.5	8.5	8.5	8.5	8.5	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
62																		9.5	9.5	9.5	9.5	9.0	9.0	9.0	9.0	9.0	9.0	8.5	8.5	8.5	8.5	8.5	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.5	7.5	7.5

Not Analyzed

If 10 reconstituted rods are present in the fuel, add an additional 5.0 years of cooling time to cooling times shown in the table.

(continued)

Explanatory notes and limitations regarding the use of this table follow Table 1-7m.

Note: For burnups ≤ 20 GWd/MTU and enrichments between 0.5 and 0.9 wt. % U-235, the minimum cooling time is 3 years.

Table 1-7k
BWR Fuel Qualification Table for Fuel with 0.60 kW per FA for the NUHOMS®-69BTH DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 170 kgU per FA)

BU	Assembly Average Initial U-235 Enrichment, wt. %																																						
GWd/MTU	0.9	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
15	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
20	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
25	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
28	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
30	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
32							3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
34							3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
36									3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
38									4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
39									4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
40												4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
41																4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
42																4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
43																4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5
44																4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
45																4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
46																4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
47																4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0
48																5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0
49																5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
50																5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
51																5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
52																5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5
53																5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
54																5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
55																6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0
56																6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0
57																6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
58																6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
59																6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5
60																7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
61																7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
62																7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0

Not Analyzed

If 10 reconstituted rods are present in the fuel, add an additional 5.0 years of cooling time to cooling times shown in the table.

Explanatory notes and limitations regarding the use of this table follow Table 1-7m.

Note: For burnups ≤ 20 GWd/MTU and enrichments between 0.5 and 0.9 wt. % U-235, the minimum cooling time is 3 years.

Table 1-7l is deleted.

Table 1-7m
BWR Fuel Qualification Table for Fuel with 0.90 kW per FA for the NUHOMS®-69BTH DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 198 kgU per FA)

BU GWd/MTU	Maximum Assembly Average Initial U-235 Enrichment, wt. % (Blank Shaded Area Corresponds to “Not Analyzed” Domain)																																							
	0.9	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
15	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
20	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
25	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
28	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
30	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
32							3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
34							3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
36									3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
38									3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
39									3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
40												3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
41																3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
42																3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
43				Not Analyzed												3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
44																3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
45																3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0
46																3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
47																4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
48																4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
49																4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
50																4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
51																4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5
52																4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
53																4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
54																4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
55																4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
56																4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0
57																5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0
58																5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
59																5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
60																5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
61																5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	4.5	4.5	4.5	4.5
62																5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5

If 10 reconstituted rods are present in the fuel, add an additional 5.0 years of cooling time to cooling times shown in the table.

(continued)

Explanatory notes and limitations regarding the use of this table follow Table 1-7m.

Note: For burnups ≤ 20 GWd/MTU and enrichments between 0.5 and 0.9 wt. % U-235, the minimum cooling time is 3 years.

Table 1-7m
BWR Fuel Qualification Table for Fuel with 0.90 kW per FA for the NUHOMS®-69BTH DSC

(Minimum required years of cooling time after reactor core discharge for fuel with 170 kgU per FA)

BU GWd/MTU	Assembly Average Initial U-235 Enrichment, wt. %																																						
	0.9	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	5.0
10	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
15	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
20	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
25	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
28	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
30	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
32							3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
34							3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
36									3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
38									3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
39									3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
40												3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
41																3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
42																3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
43	Not Analyzed															3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
44																3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
45																3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
46																3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
47	If 10 reconstituted rods are present in the fuel, add an additional 5.0 years of cooling time to cooling times shown in the table.															3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
48																3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
49																3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
50																3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0	3.0
51																3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
52																4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
53																4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
54																4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
55																4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
56																4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5
57																4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5
58																4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
59																4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
60																4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
61																4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
62																4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0

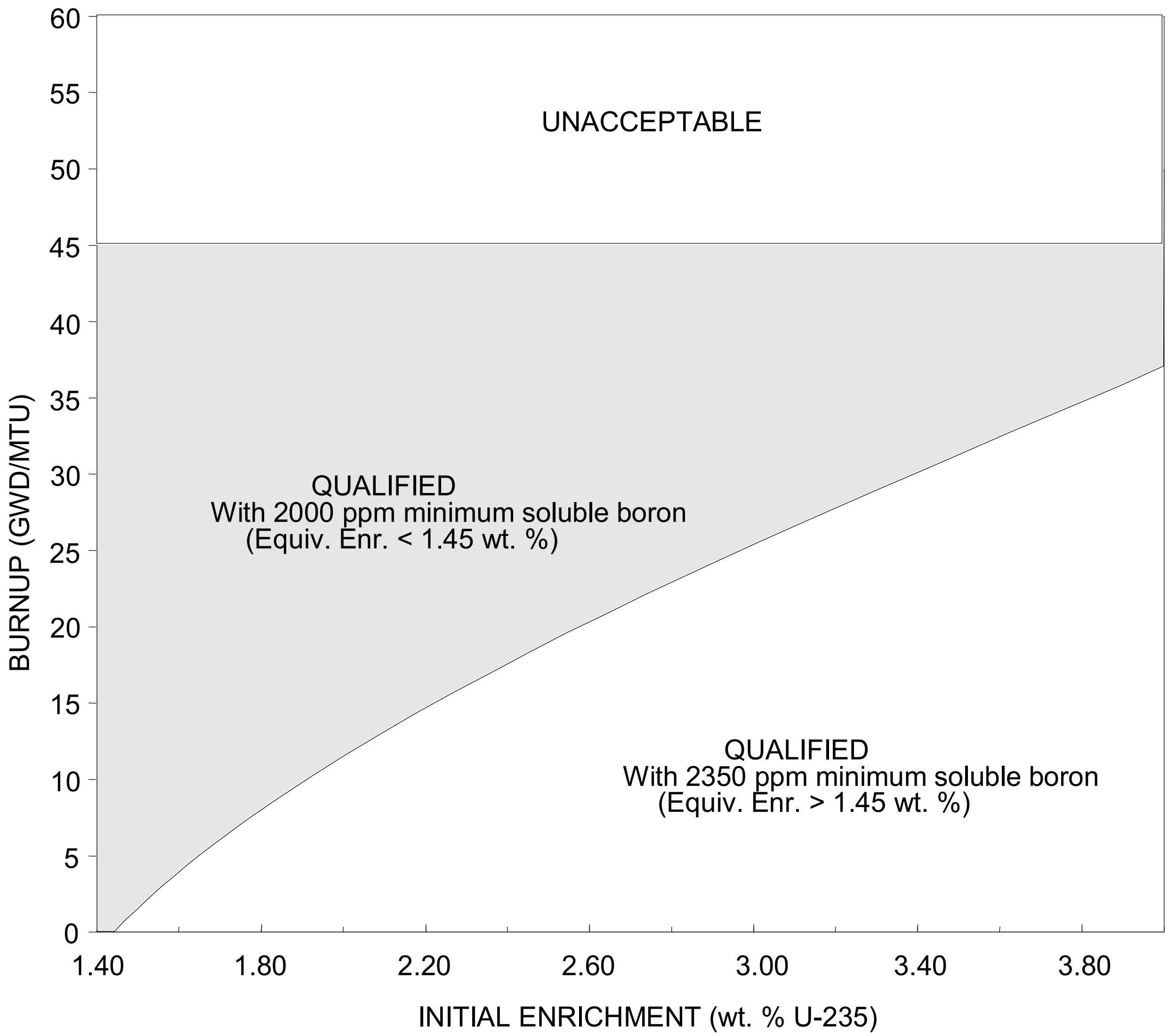
Explanatory notes and limitations regarding the use of this table follow Table 1-7m.

Note: For burnups ≤ 20 GWd/MTU and enrichments between 0.5 and 0.9 wt. % U-235, the minimum cooling time is 3 years.

Notes for Tables 1-7k and 1-7m:

- Burnup = assembly average burnup.
- Shaded regions in Tables 1-7k and 1-7m above are not analyzed.
- Use burnup and enrichment to look up minimum cooling time in years. Licensee is responsible for ensuring that uncertainties in fuel enrichment and burnup are correctly accounted for during fuel qualification.
- To determine the minimum required cooling time for fuel with 198 kgU/FA, use the sections of the Fuel Qualification Tables labelled "Minimum required years of cooling time after reactor core discharge for Fuel with 198 kgU per FA."
- To determine the minimum required cooling time for fuel with up to 170 kgU/FA, use the sections of the Fuel Qualification Tables labelled "Minimum required years of cooling time after reactor core discharge for fuel with 170 kgU per FA."
- To determine the minimum required cooling time for fuel with greater than 170 kgU/FA up to 198 kgU/FA, two options are available. Either use the sections of the Fuel Qualification Tables labelled "Minimum required years of cooling time after reactor core discharge for fuel with 198 kgU per FA," or use the following fitting equation: $CT_{new} = 6.56 * [(\ln(kgU_{new}) - 5.13) * CT_{high} - (\ln(kgU_{new}) – 5.28) * CT_{low}]$, where kgU_{new} is the mass of the FA in question between 170 and 198 kgU, CT_{high} is the cooling time looked up from the 198 kgU per FA FQTs, and CT_{low} is the cooling time looked up from the 170 kgU per FA FQTs. To use the fitting equation, the Burnup, wt. % U235, and the decay heat zone value must be identical for the 170 kgU FA, the 198 kgU FA, and the FA in question between 170 and 198 kgU/FA, and the fitting equation solution shall be rounded up to the next higher single decimal place.
- For fuel assemblies containing blankets, use the bundle average enrichment.
- Round burnup UP to next higher entry, round enrichments DOWN to next lower entry.
- Fuel with an assembly average initial enrichment less than 0.5 (or less than the minimum provided above for each burnup) or greater than 5.0 wt. % U-235 is unacceptable for storage.
- Fuel with a burnup greater than 62 GWd/MTU is unacceptable for storage.
- Fuel with a burnup less than 10 GWd/MTU is acceptable for storage after three-years cooling.
- See Figure 1-31 through Figure 1-36 and Figure 1-38 for a description of the heat load zone configurations.
- For reconstituted fuel assemblies with UO_2 and/or Zr rods or Zr pellets and/or stainless steel rods, use the assembly average equivalent enrichment to determine the minimum cooling time.
- If irradiated stainless steel rods are present in the reconstituted fuel assembly, add an additional 5.0 years of cooling time.
- The cooling times for damaged and intact assemblies are identical.
- For fuel assemblies containing BLEU fuel pellets, add 3.0 years of additional cooling time to the values shown in Table 1-7k and 1-7m.

The following are examples of an intact fuel assembly to be loaded into a decay heat zone with a limit of 0.22 kWt/FA. The FA has an initial enrichment of 3.65 wt. % U-235 and a burnup of 41.5 GWd/MTU:



Note: The maximum planar average initial enrichment is specified as “initial enrichment.”

Figure 1-1
PWR Fuel Criticality Acceptance Curve for the 24P DSC

	Zone 2*	**Zone 2***	**Zone 2***	**Zone 2***	
Zone 2*	**Zone 1***	**Zone 1***	**Zone 1***	**Zone 1***	**Zone 2***
Zone 2*	**Zone 1***	**Zone 1**	**Zone 1**	**Zone 1***	**Zone 2***
Zone 2*	**Zone 1***	**Zone 1**	**Zone 1**	**Zone 1***	**Zone 2***
Zone 2*	**Zone 1***	**Zone 1***	**Zone 1***	**Zone 1***	**Zone 2***
	Zone 2*	**Zone 2***	**Zone 2***	**Zone 2***	

* Denotes locations where intact or damaged FAs may be stored.

	Zone 1	**Zone 2**
Max. Decay Heat / FA (kW)	0.63	0.87
Max. Decay Heat / Zone (kW)	10.08	13.92
Max. Decay Heat / DSC (kW)	24.0	

Notes:
(1) Up to 28 damaged FAs may be stored in Zone 1 and Zone 2 only.

Figure 1-2
Heat Load Zoning Configuration 1 for the NUHOMS®-32PT DSC

	Zone 2**	Zone 1*	Zone 1*	Zone 2**	
Zone 2**	Zone 1*	Zone 1*	Zone 1*	Zone 1*	Zone 2**
Zone 1*	Zone 1*	Zone 1	Zone 1	Zone 1*	Zone 1*
Zone 1*	Zone 1*	Zone 1	Zone 1	Zone 1*	Zone 1*
Zone 2**	Zone 1*	Zone 1*	Zone 1*	Zone 1*	Zone 2**
	Zone 2**	Zone 1*	Zone 1*	Zone 2**	

* Denotes locations where intact or damaged FAs may be stored.
** Denotes locations where intact or damaged FAs or FFCs may be stored.

	Zone 1	Zone 2
Max. Decay Heat / FA (kW)	0.6	1.2
Max. Decay Heat / Zone (kW)	14.4	9.6
Max. Decay Heat / DSC (kW)	24.0	

Notes:
(1) The maximum allowable heat load per FFC is 0.8 kW.
(2) Up to 28 damaged FAs may be stored in Zone 1 and Zone 2 only. When storing damaged FAs in Zone 1, intact FAs or Failed Fuel Cans (FFCs) may be stored in the remaining Zone 1 and Zone 2 locations.
(3) Up to 8 FFCs may be stored in Zone 2 only. When storing FFCs in Zone 2, intact or damaged FAs may be stored in the remaining Zone 1 and Zone 2 locations.

Figure 1-3
Heat Load Zoning Configuration 2 for the NUHOMS®-32PT DSC

	Zone 1*	**Zone 1***	**Zone 1***	**Zone 1***	
Zone 1*	**Zone 1***	**Zone 1***	**Zone 1***	**Zone 1***	**Zone 1***
Zone 1*	**Zone 1***	**Zone 1**	**Zone 1**	**Zone 1***	**Zone 1***
Zone 1*	**Zone 1***	**Zone 1**	**Zone 1**	**Zone 1***	**Zone 1***
Zone 1*	**Zone 1***	**Zone 1***	**Zone 1***	**Zone 1***	**Zone 1***
	Zone 1*	**Zone 1***	**Zone 1***	**Zone 1***	

*	Denotes locations where intact or damaged FAs may be stored.

	Zone 1
Max. Decay Heat / FA (kW)	0.7
Max. Decay Heat / Zone (kW)	22.4
Max. Decay Heat / DSC (kW)	22.4

Notes:
(1)	Up to 28 damaged FAs may be stored in Zone 1 only.

Figure 1-4
Heat Load Zoning Configuration 3 for the NUHOMS®-32PT DSC

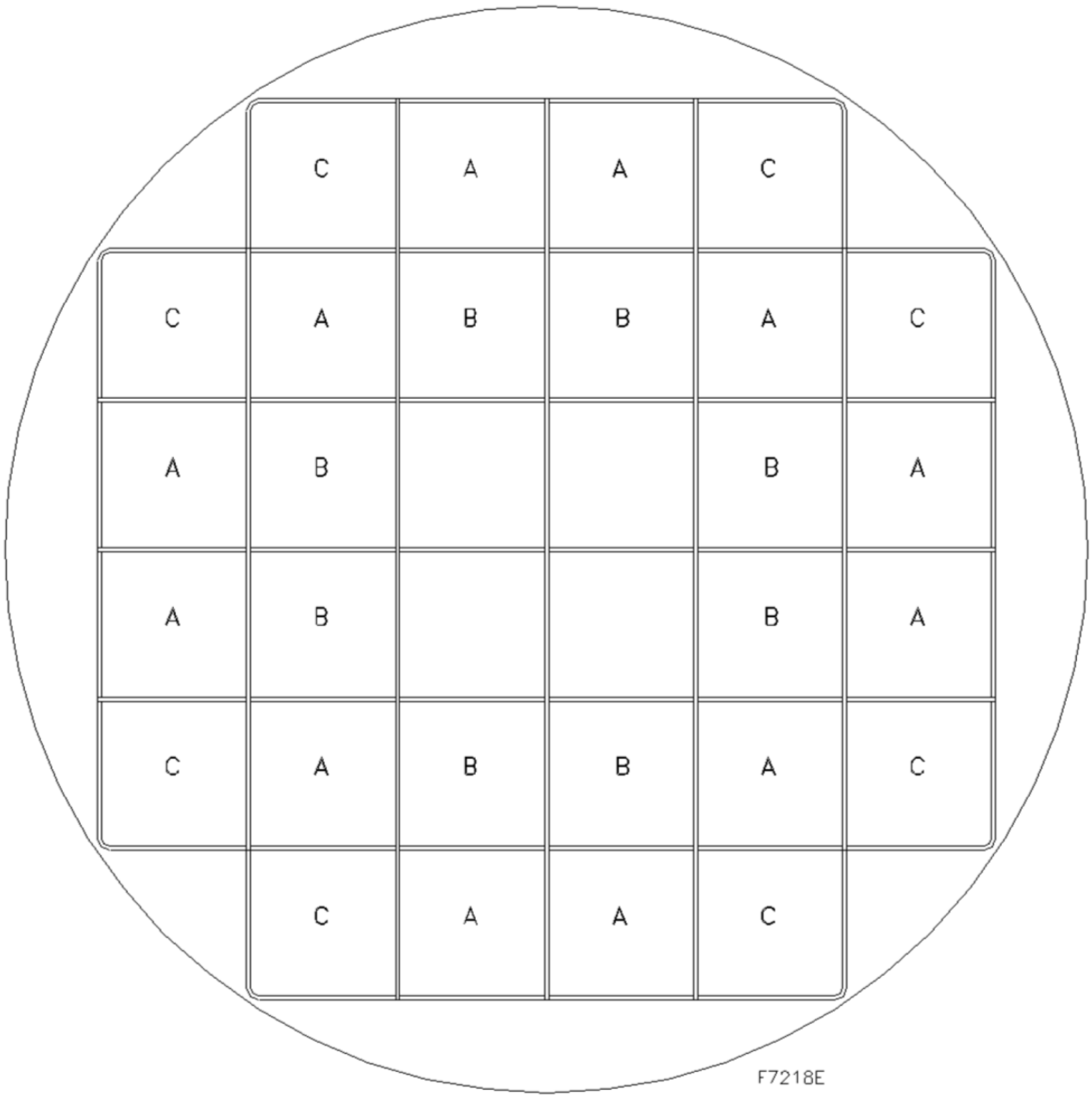
	Zone 3	Zone 5*	Zone 5*	Zone 3	
Zone 3	Zone 2*	Zone 2*	Zone 2*	Zone 2*	Zone 3
Zone 5*	Zone 2*	Zone 1	Zone 1	Zone 2*	Zone 5*
Zone 5*	Zone 2*	Zone 1	Zone 1	Zone 2*	Zone 5*
Zone 4	Zone 2*	Zone 2*	Zone 2*	Zone 2*	Zone 4
	Zone 4	Zone 5*	Zone 5*	Zone 4	

* Denotes where damaged FAs may be stored.

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Max. Decay Heat / FA (kW)	0.40	0.60	2.20	1.70	0.8(2)
Max. Decay Heat / DSC (kW)	24(1)				

Notes:
(1) Adjust payload to maintain the total DSC heat load within the specified limit.
(2) If damaged FAs are loaded in any Zone 2 or Zone 5 locations, the maximum allowable decay heat per FA in Zone 5 is 0.6 kW.
(3) Up to 20 damaged FAs may be stored in Zones 2 and 5 only.

Figure 1-4a
Heat Load Zoning Configuration 4 for the NUHOMS® -32PT DSC



Notes:

(1) The "C" locations shall be employed when loading up to 8 FFCs as specified in Table 1-1g3

(2) The "B" locations and "C" locations shall be employed when loading up to 16 damaged fuel assemblies as specified in Table 1-1g2

(3) The "A" locations, "B" locations and "C" locations shall be employed when loading greater than 16 and up to 28 damaged fuel assemblies as specified in Table 1-1g2

Figure 1-4b
Location of Damaged and Failed Fuel Assemblies inside 32PT DSC

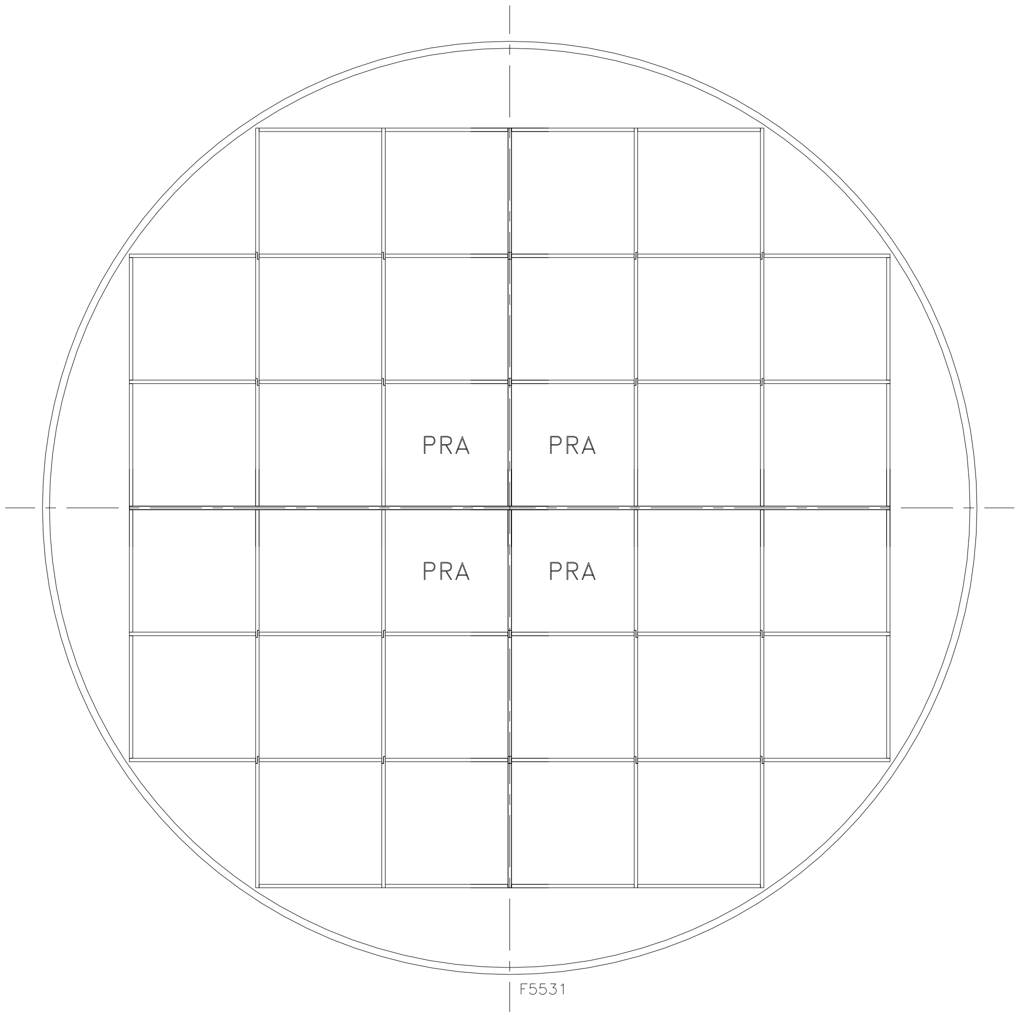
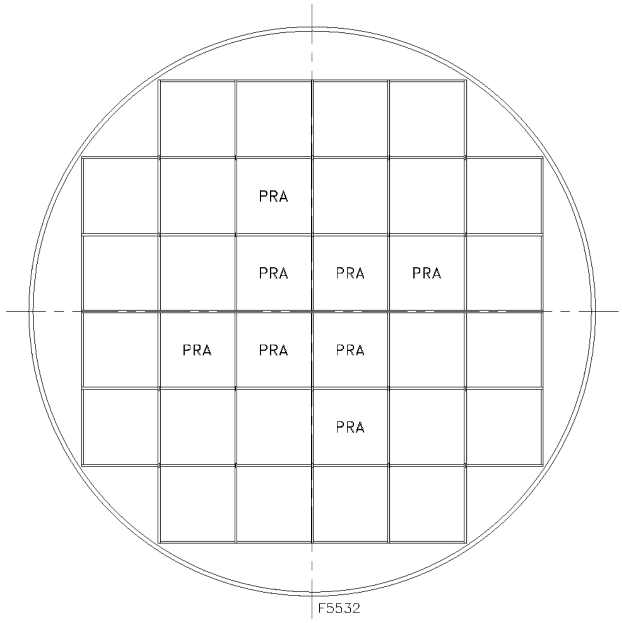


Figure 1-5
Required PRA Locations for the NUHOMS®-32PT DSC Configuration with Four PRAs



Or

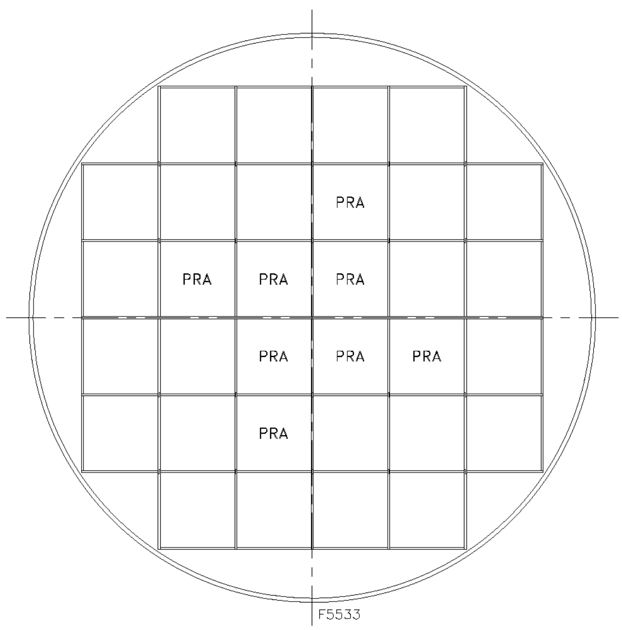


Figure 1-6
Required PRA Locations for the NUHOMS®-32PT DSC Configuration with Eight PRAs

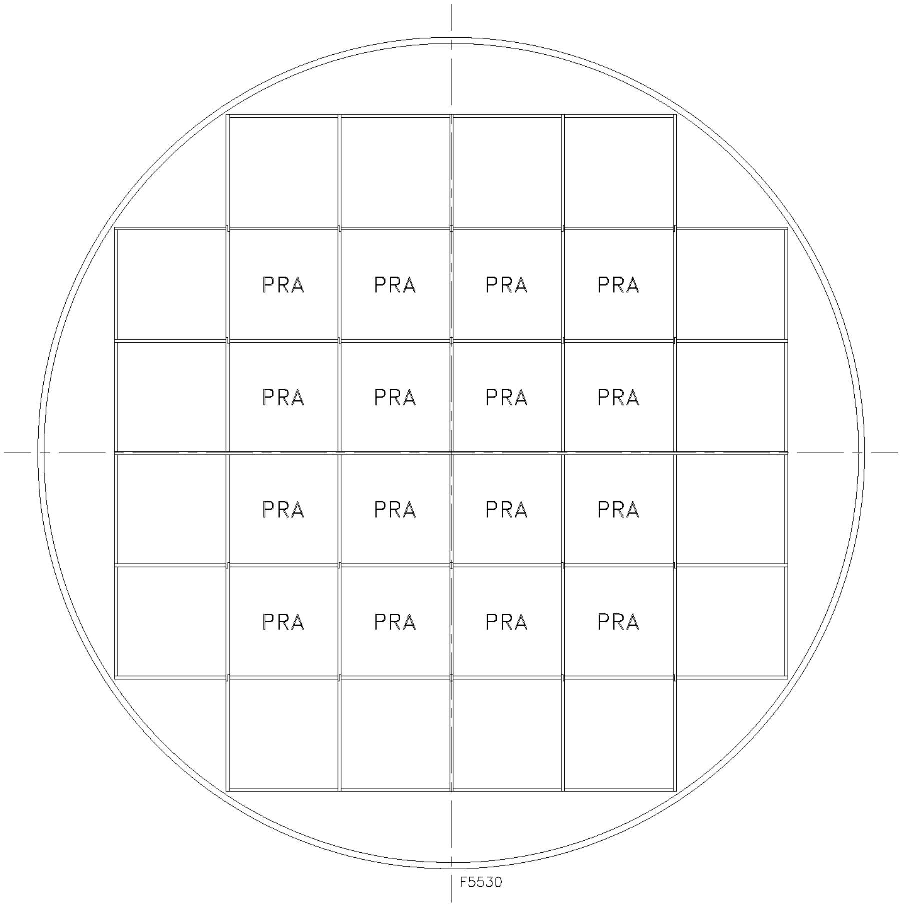
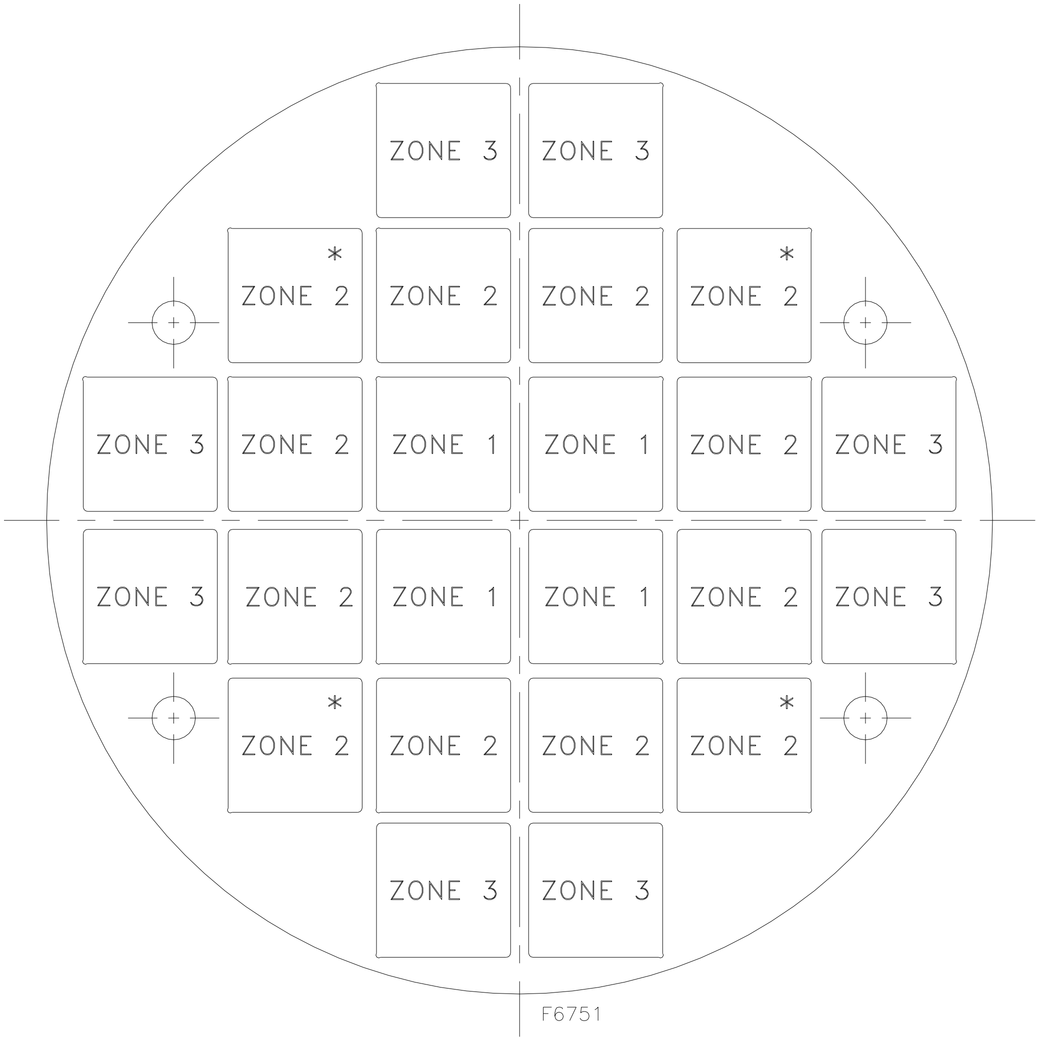


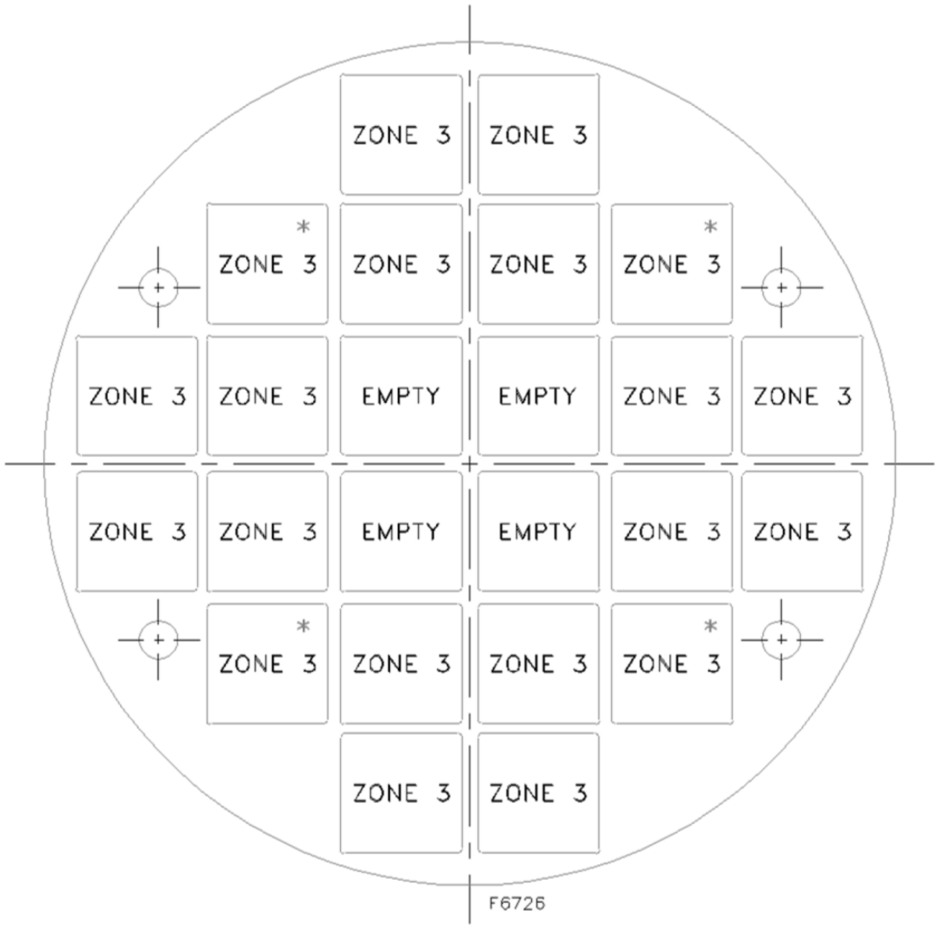
Figure 1-7
Required PRA Locations for the NUHOMS®-32PT DSC Configuration with Sixteen PRAs



* DENOTES LOCATION WHERE INTACT OR DAMAGED FUEL ASSEMBLY CAN BE STORED.

	Zone 1	Zone 2	Zone 3
Maximum Decay Heat (kW/FA)	0.7	1	1.3
Maximum Decay Heat per Zone (kW)	2.8	10.8	10.4

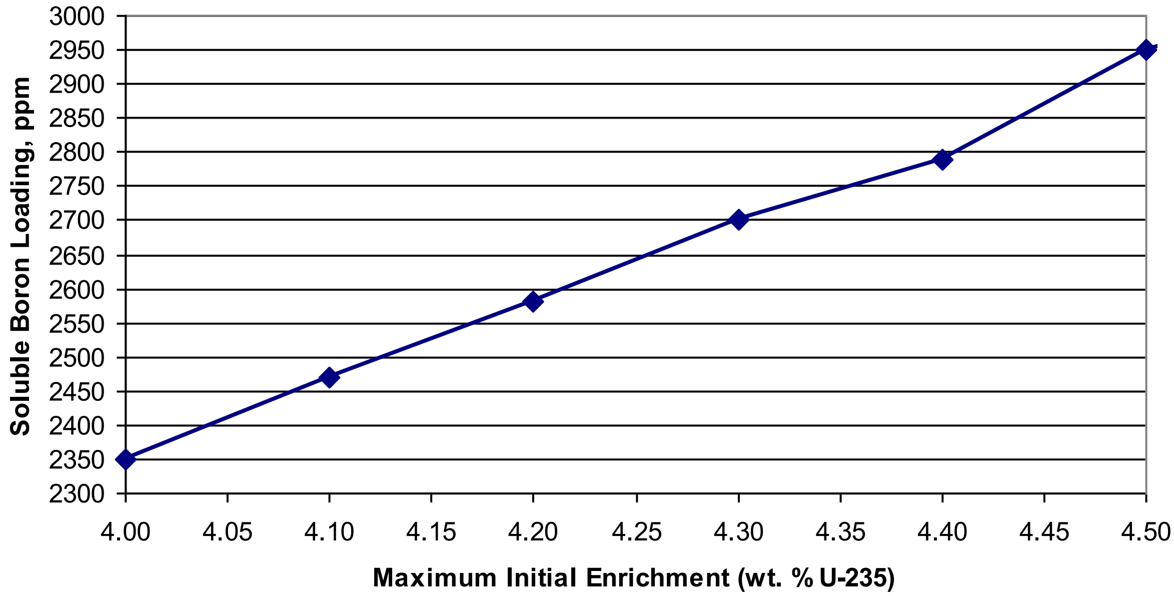
Figure 1-8
Heat Load Zoning Configuration for Fuel Assemblies (with or without Control Components) Stored in NUHOMS®-24PHB DSC–Configuration 1



* DENOTES LOCATION WHERE INTACT OR DAMAGED FUEL ASSEMBLY CAN BE STORED.

	Zone 1	Zone 2	Zone 3
Maximum Decay Heat (kW/FA)	N/A	N/A	1.3
Maximum Decay Heat per Zone (kW)	N/A	N/A	24.0

Figure 1-9
Heat Load Zoning Configuration for Fuel Assemblies (with or without Control Components) Stored in NUHOMS®-24PHB DSC–Configuration 2

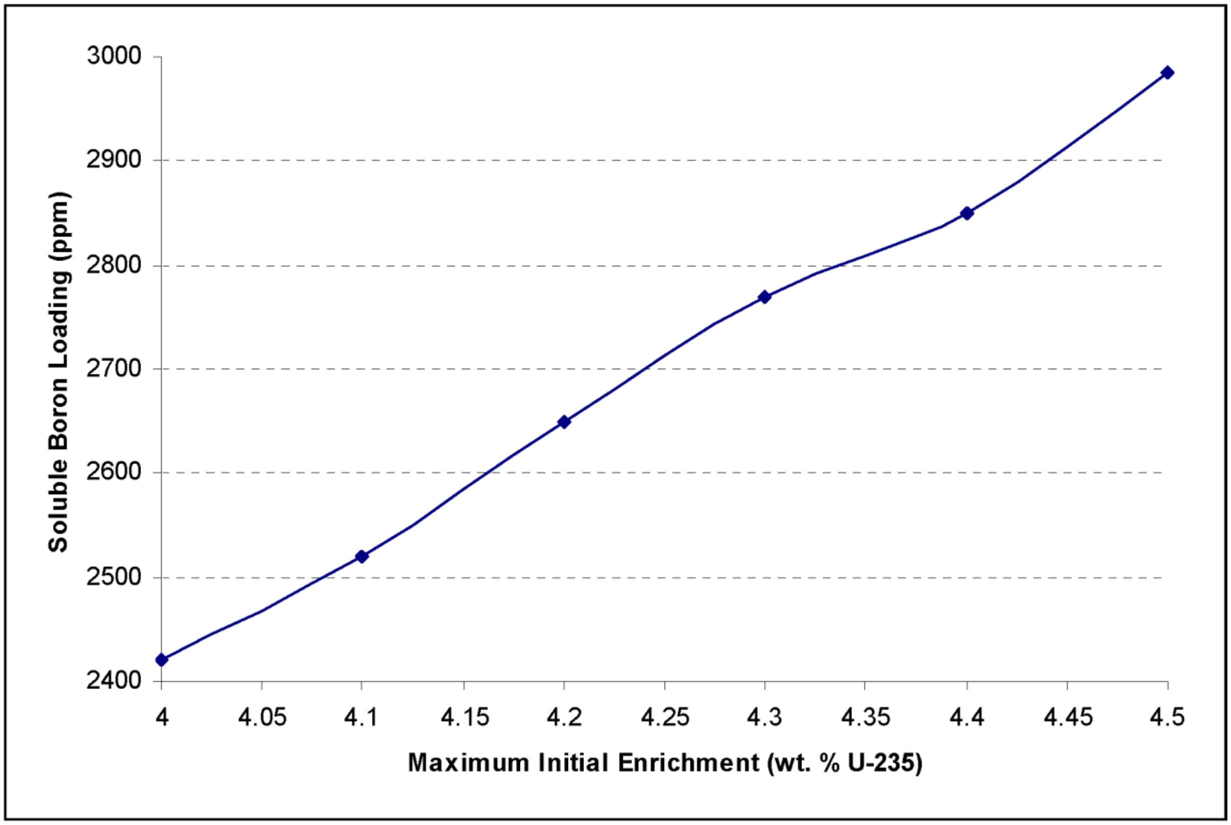


Linear Interpolation allowed between points.

Initial Enrichment	Boron Loading, ppm (when only intact assemblies are loaded)
≤ 4.0	2350
4.1	2470
4.2	2580
4.3	2700
4.4	2790
4.5	2950

Note: The maximum planar average initial enrichment is specified as “initial enrichment.”

Figure 1-10
Soluble Boron Concentration vs. Fuel Initial U-235 Enrichment (Intact Fuel) for the NUHOMS® 24PHB System

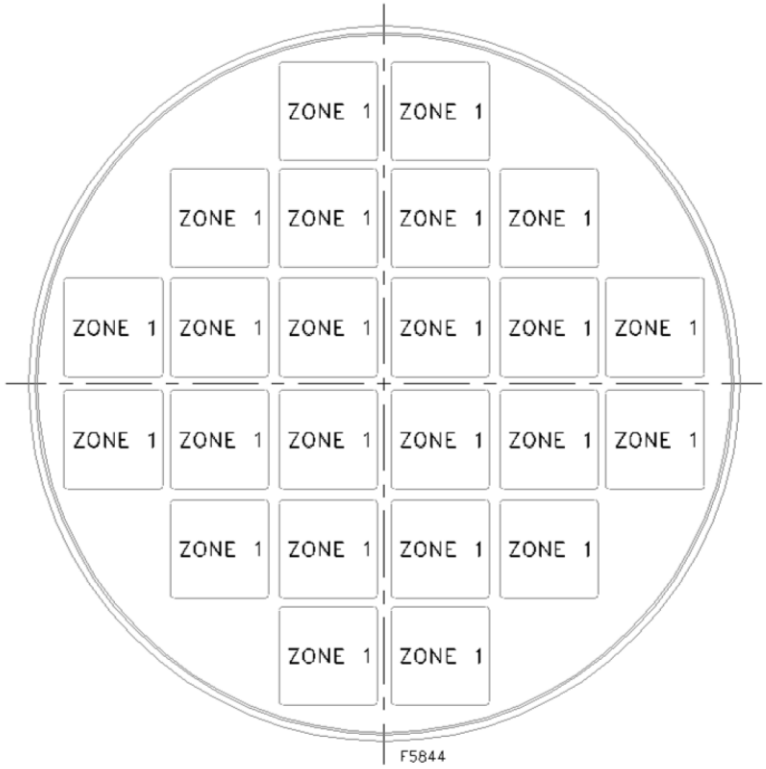


Linear interpolation allowed between points.

Initial Enrichment	Boron Loading, ppm (whenever damaged assemblies are loaded)
≤4.0	2420
4.1	2520
4.2	2650
4.3	2770
4.4	2850
4.5	2985

Note: The maximum planar average initial enrichment is specified as "Initial Enrichment."

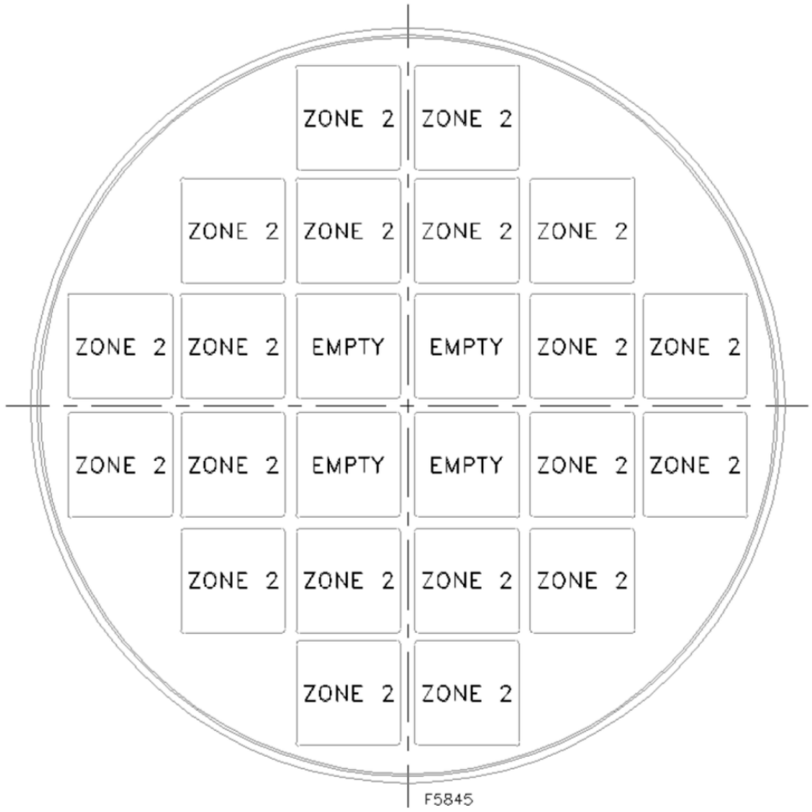
Figure 1-10a
Soluble Boron Concentration vs. Fuel Initial U-235 Enrichment (Damaged Fuel) for the NUHOMS®-24PHB System



	Zone 1	Zone 2	Zone 3	Zone 4
Maximum Decay Heat (kW/FA)	1.7[1]	N/A	N/A	N/A
Maximum Decay Heat per Zone (kW)	40.8	N/A	N/A	N/A

(1) The maximum decay heat load allowed for failed fuel assemblies is 1.0 kW/FA.

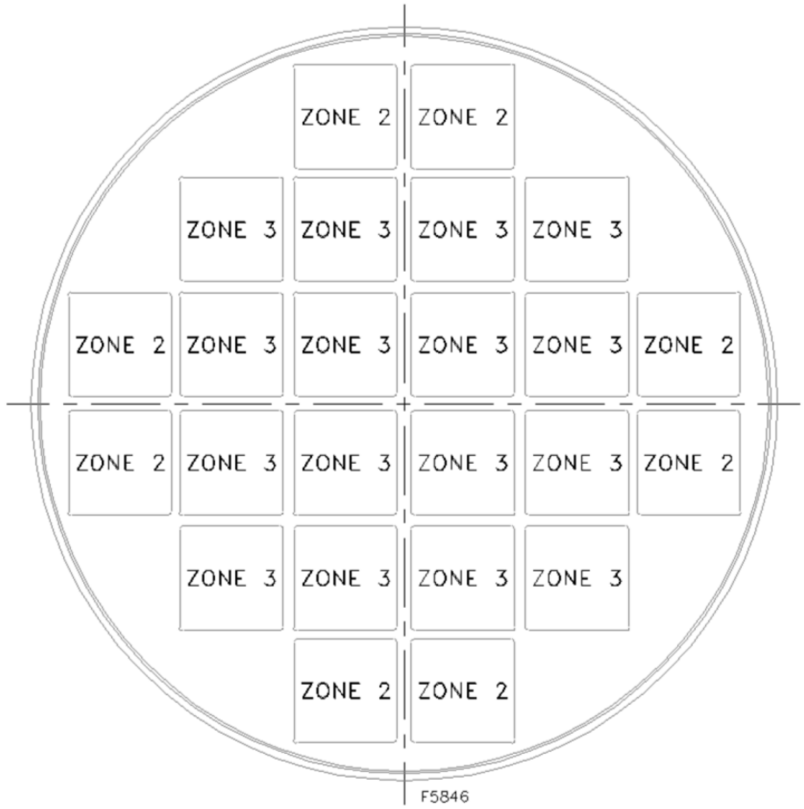
Figure 1-11
Heat Load Zoning Configuration Number 1 for 24PTH-S and 24PTH-L DSCs



	Zone 1	Zone 2	Zone 3	Zone 4
Maximum Decay Heat (kW/FA)	N/A	2[(1)]	N/A	N/A
Maximum Decay Heat per Zone (kW)	N/A	40	N/A	N/A

(1) The maximum decay heat load allowed for failed fuel assemblies is 1.0 kW/FA.

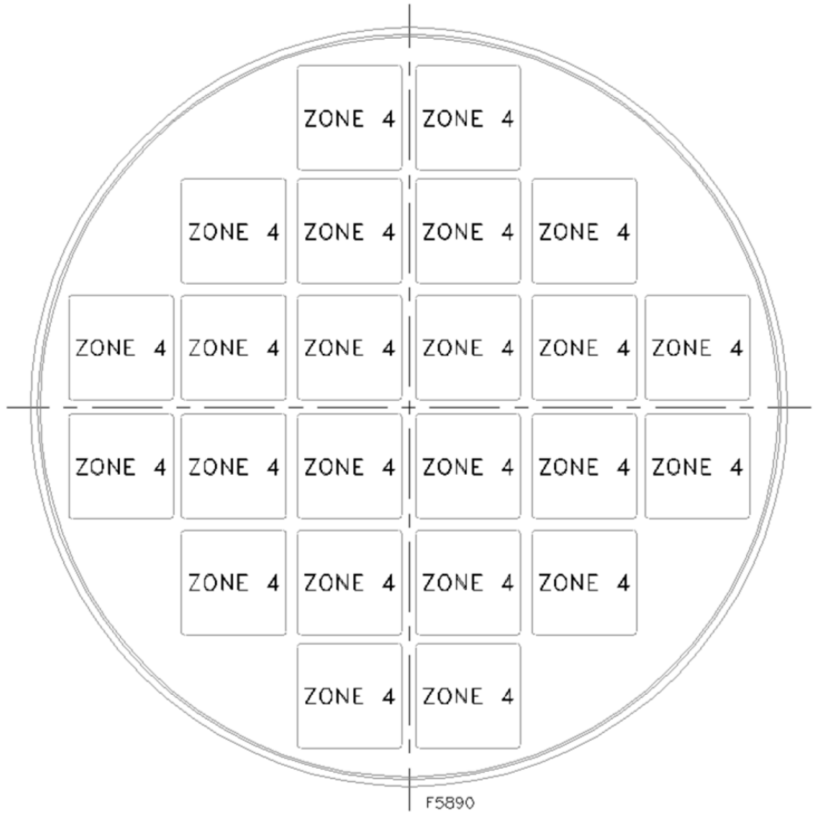
Figure 1-12
Heat Load Zoning Configuration Number 2 for 24PTH-S and 24PTH-L DSCs



	Zone 1	Zone 2	Zone 3	Zone 4
Maximum Decay Heat (kW/FA)	N/A	2(1)	1.5	N/A
Maximum Decay Heat per Zone (kW)	N/A	16	24	N/A

(1) The maximum decay heat load allowed for failed fuel assemblies is 1.0 kW/FA.

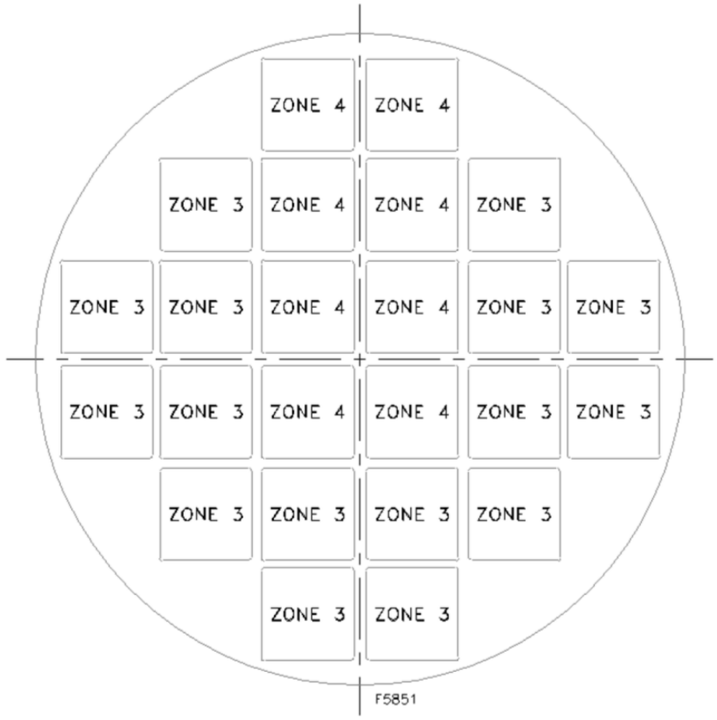
Figure 1-13
Heat Load Zoning Configuration Number 3 for 24PTH-S and 24PTH-L DSCs



	Zone 1	Zone 2	Zone 3	Zone 4
Maximum Decay Heat (kW/FA)	N/A	N/A	N/A	1.3[(1)]
Maximum Decay Heat per Zone (kW)	N/A	N/A	N/A	31.2

[(1)] The maximum decay heat load allowed for failed fuel assemblies is 0.6 kW/FA.

Figure 1-14
Heat Load Zoning Configuration Number 4 for 24PTH-S and 24PTH-L DSCs



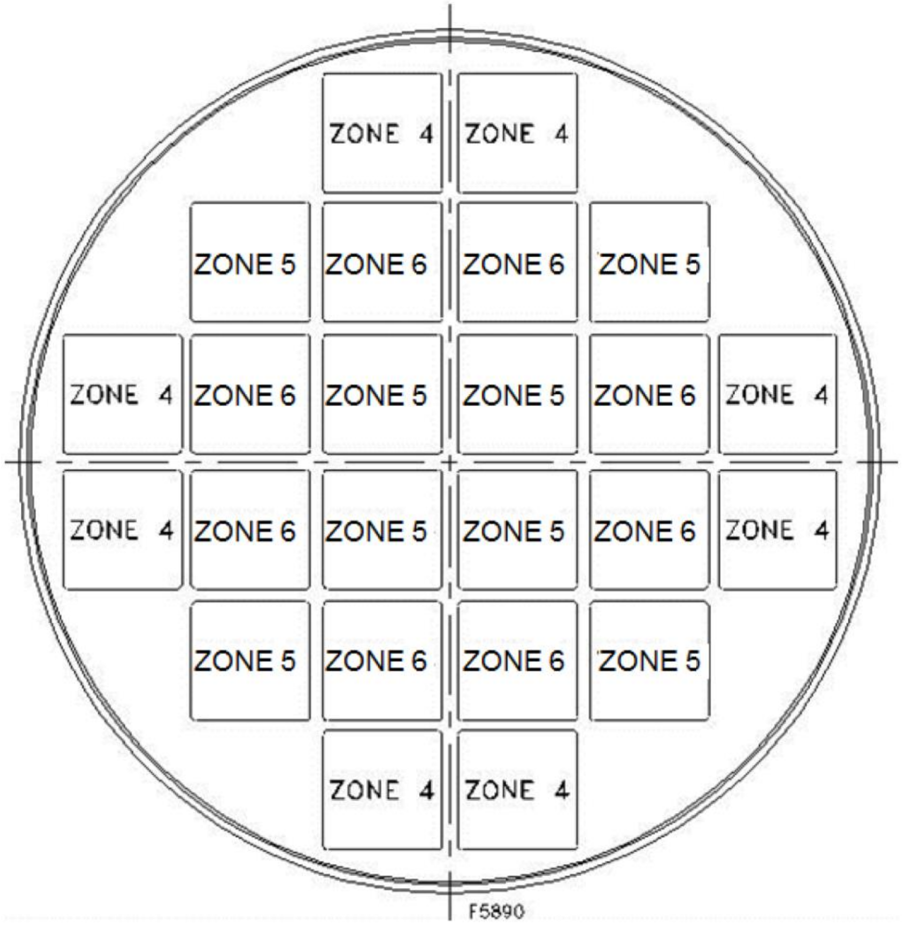
	Zone 1	Zone 2	Zone 3	Zone 4
Maximum Decay Heat (kW/FA)	N/A	N/A	1.5(3)	1.3(3)
Maximum Decay Heat per Zone (kW)	N/A	N/A	Note 1	10.4

(1) Fuel assemblies with a maximum heat load of 1.5 kW are permitted in Zone 3 as long as the total of 24 kW/canister maximum heat load is maintained.

(2) This configuration is applicable to Basket Types *2 or 3* only.

(3) The maximum decay heat load allowed for failed fuel assemblies is 0.6 kW/FA. If damaged fuel assemblies are loaded with the failed fuel assemblies in the same basket, the maximum decay heat load allowed for damaged fuel assemblies is also 0.6 kW/FA.

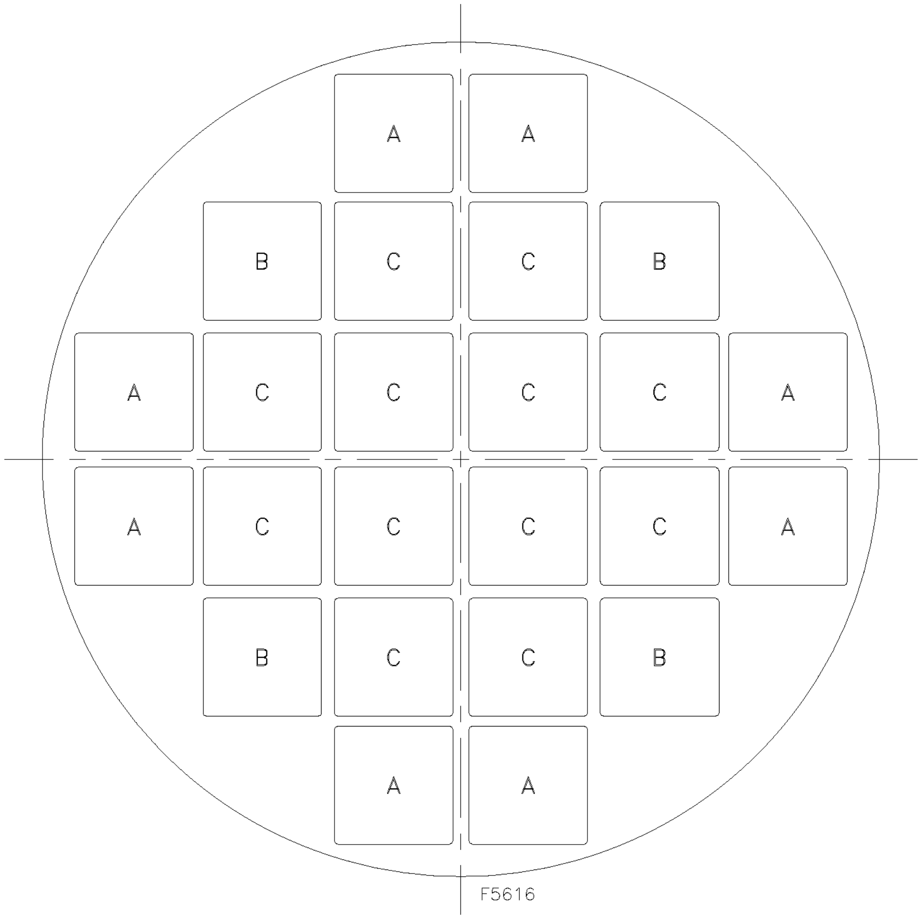
Figure 1-15
Heat Load Zoning Configuration Number 5 for 24PTH-S-LC(2)



	Zone 4	Zone 5	Zone 6
Maximum Decay Heat (kW/FA)	1.3	0.6	2.5
Maximum Decay Heat per Zone (kW)	10.4	4.8	20.0

(1) Only intact fuel assemblies are allowed for this HLZC.

Figure 1-15a
Heat Load Zoning Configuration No. 6 for 24PTH-S and 24PTH-L DSCs with Type 1 *or Type 3* Basket



Notes:

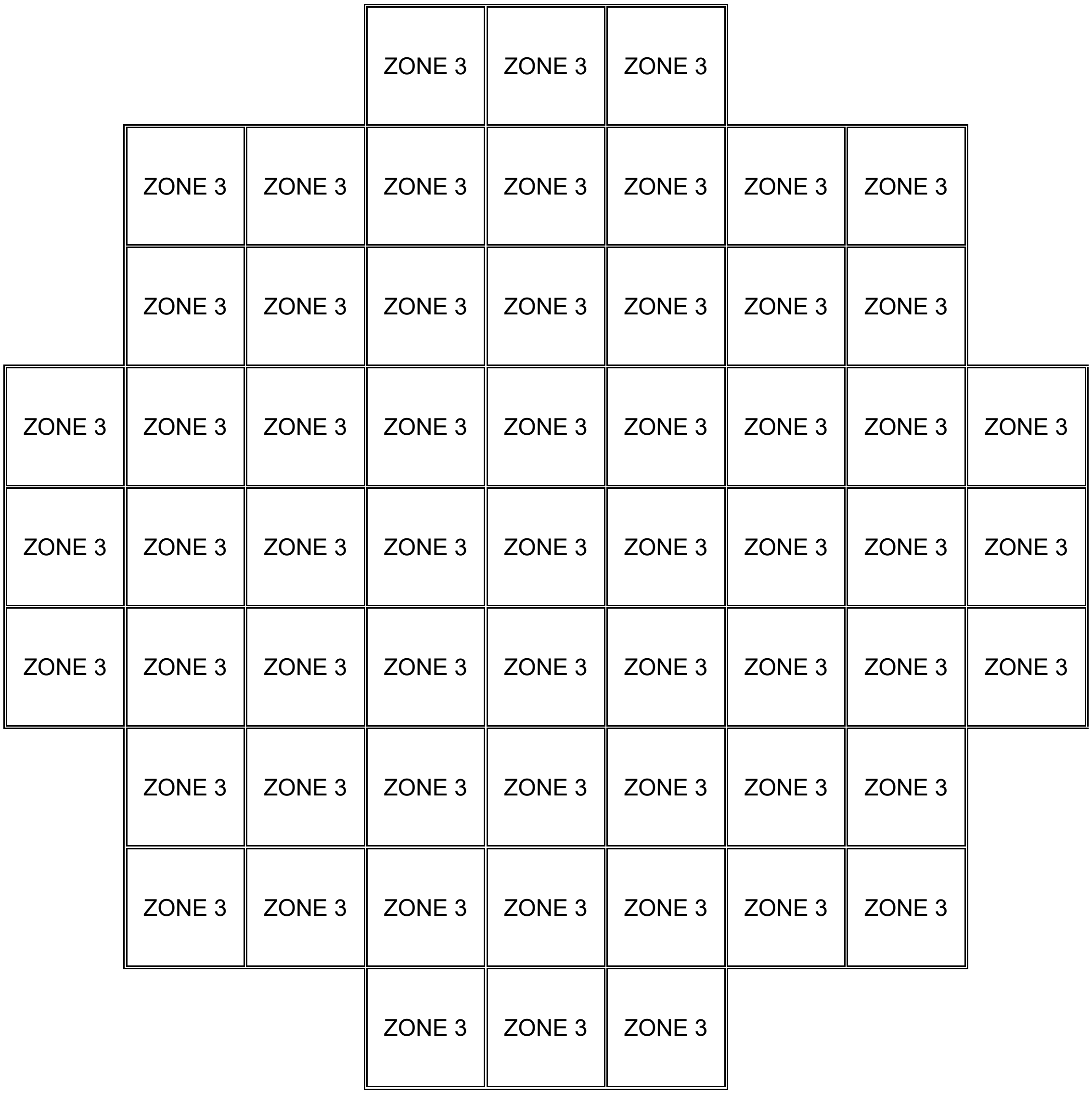
1. Locations identified as “A” are for placement of up to 8 damaged or failed fuel assemblies (balance intact).
2. Locations identified as ”B“ are for placement of up to 4 additional damaged fuel assemblies (Maximum of 12 damaged fuel assemblies allowed, Locations “A” and “B” combined, balance intact).
3. Locations identified as “C” are for placement of up to 12 intact fuel assemblies, including 4 empty slots in the center as shown in Figure 1-12.

Figure 1-16
Location of Failed or Damaged Fuel Inside 24PTH DSC(1)(2)(3)

		P	P		
	P	I	I	P	
P	I	I	I	I	P
P	I	I	I	I	P
	P	I	I	P	
		P	P		

P = Peripheral Location
I = Inner Location

Figure 1-16a
Location of Peripheral and Inner Fuel Locations for the 24PTH DSC



	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Maximum Decay Heat (kW/FA)	NA	NA	0.393	NA	NA	NA
Maximum Decay Heat per Zone (kW)	NA	NA	22.0	NA	NA	NA
Maximum Decay Heat per DSC (kW)	22.0					

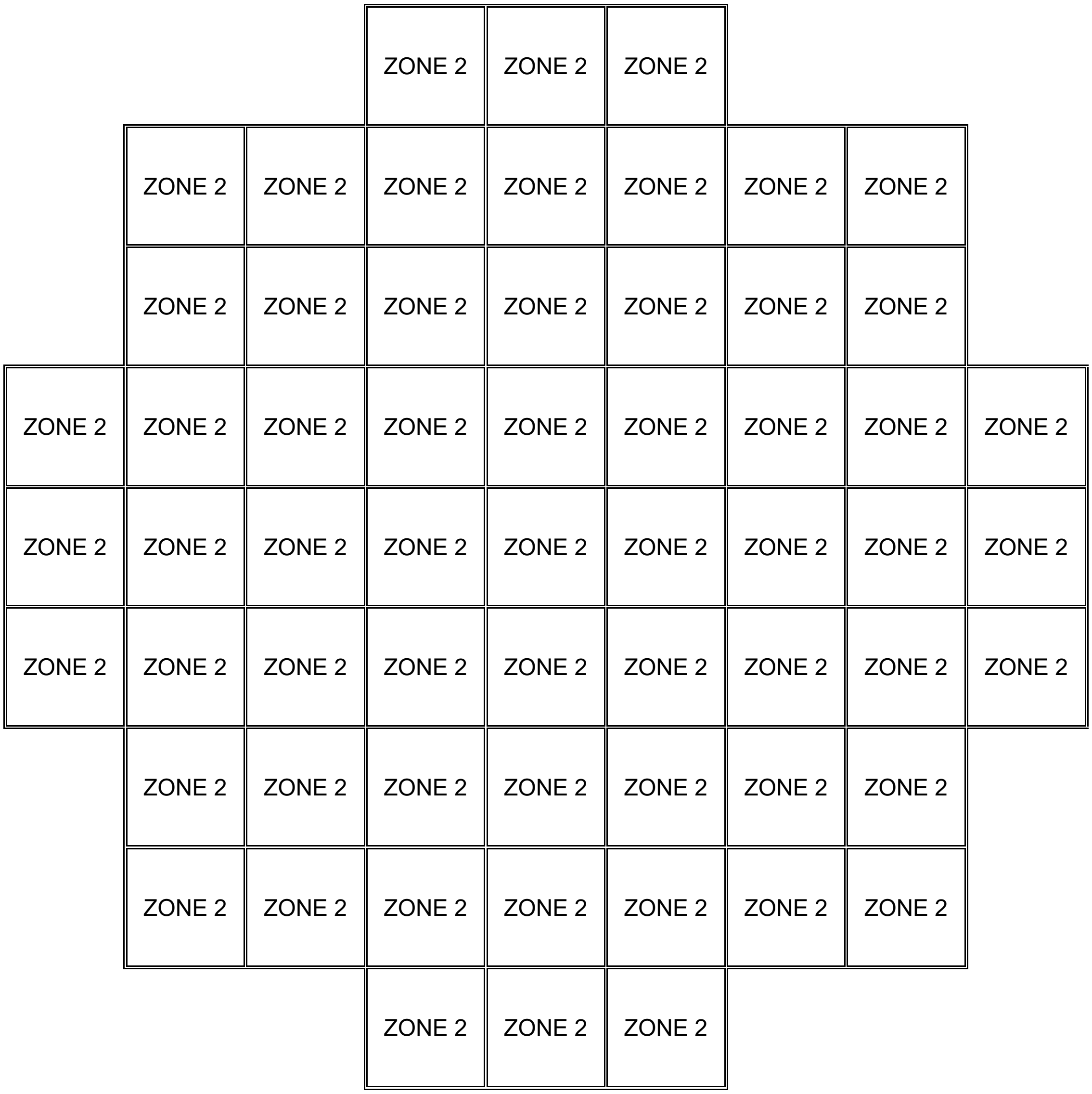
Figure 1-17
Heat Load Zoning Configuration Number 1 for Type 1 or Type 2 61BTH DSCs

			ZONE 5	ZONE 5	ZONE 5			
	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	
	ZONE 4	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 4	
ZONE 5	ZONE 4	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 4	ZONE 5
ZONE 5	ZONE 4	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 4	ZONE 5
ZONE 5	ZONE 4	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 4	ZONE 5
	ZONE 4	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 4	
	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	
			ZONE 5	ZONE 5	ZONE 5			

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Maximum Decay Heat (kW/FA)	NA	0.35	NA	0.48	0.54	NA
Maximum Decay Heat per Zone (kW)	NA	8.75	NA	11.52	6.48	NA
Maximum Decay Heat per DSC (kW)	22.0[(1)]					

(1) Adjust payload to maintain total DSC heat load within the specified limit

Figure 1-18
Heat Load Zoning Configuration Number 2 for Type 1 or Type 2 61BTH DSCs



	Zone 1	**Zone 2**	**Zone 3**	**Zone 4**	**Zone 5**	**Zone 6**
Maximum Decay Heat (kW/FA)	NA	0.35	NA	NA	NA	NA
Maximum Decay Heat per Zone (kW)	NA	19.4	NA	NA	NA	NA
Maximum Decay Heat per DSC (kW)	19.4					

Figure 1-19
Heat Load Zoning Configuration Number 3 for Type 1 or Type 2 61BTH DSCs

			ZONE 5	ZONE 5	ZONE 5			
	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	
	ZONE 4	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 4	
ZONE 5	ZONE 4	ZONE 2	ZONE 1	ZONE 1	ZONE 1	ZONE 2	ZONE 4	ZONE 5
ZONE 5	ZONE 4	ZONE 2	ZONE 1	ZONE 1	ZONE 1	ZONE 2	ZONE 4	ZONE 5
ZONE 5	ZONE 4	ZONE 2	ZONE 1	ZONE 1	ZONE 1	ZONE 2	ZONE 4	ZONE 5
	ZONE 4	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 2	ZONE 4	
	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	
			ZONE 5	ZONE 5	ZONE 5			

	Zone 1	**Zone 2**	**Zone 3**	**Zone 4**	**Zone 5**	**Zone 6**
Maximum Decay Heat (kW/FA)	0.22	0.35	NA	0.48	0.54	NA
Maximum Decay Heat per Zone (kW)	1.98	5.60	NA	11.52	6.48	NA
Maximum Decay Heat per DSC (kW)	19.4[(1)]					

(1) Adjust payload to maintain total DSC heat load within the specified limit.

Figure 1-20
Heat Load Zoning Configuration Number 4 for Type 1 or Type 2 61BTH DSCs

			ZONE 5	ZONE 5	ZONE 5			
	ZONE 5	ZONE 5	ZONE 5	ZONE 5	ZONE 5	ZONE 5	ZONE 5	
	ZONE 5	ZONE 5	ZONE 5	ZONE 5	ZONE 5	ZONE 5	ZONE 5	
ZONE 5	ZONE 5	ZONE 5	ZONE 2	ZONE 2	ZONE 2	ZONE 5	ZONE 5	ZONE 5
ZONE 5	ZONE 5	ZONE 5	ZONE 2	ZONE 2	ZONE 2	ZONE 5	ZONE 5	ZONE 5
ZONE 5	ZONE 5	ZONE 5	ZONE 2	ZONE 2	ZONE 2	ZONE 5	ZONE 5	ZONE 5
	ZONE 5	ZONE 5	ZONE 5	ZONE 5	ZONE 5	ZONE 5	ZONE 5	
	ZONE 5	ZONE 5	ZONE 5	ZONE 5	ZONE 5	ZONE 5	ZONE 5	
			ZONE 5	ZONE 5	ZONE 5			

	Zone 1	**Zone 2**	**Zone 3**	**Zone 4**	**Zone 5**	**Zone 6**
Maximum Decay Heat (kW/FA)	NA	0.35	NA	NA	0.54	NA
Maximum Decay Heat per Zone (kW)	NA	3.15	NA	NA	28.08	NA
Maximum Decay Heat per DSC (kW)	31.2(1)					

(1) Adjust payload to maintain total DSC heat load within the specified limit.

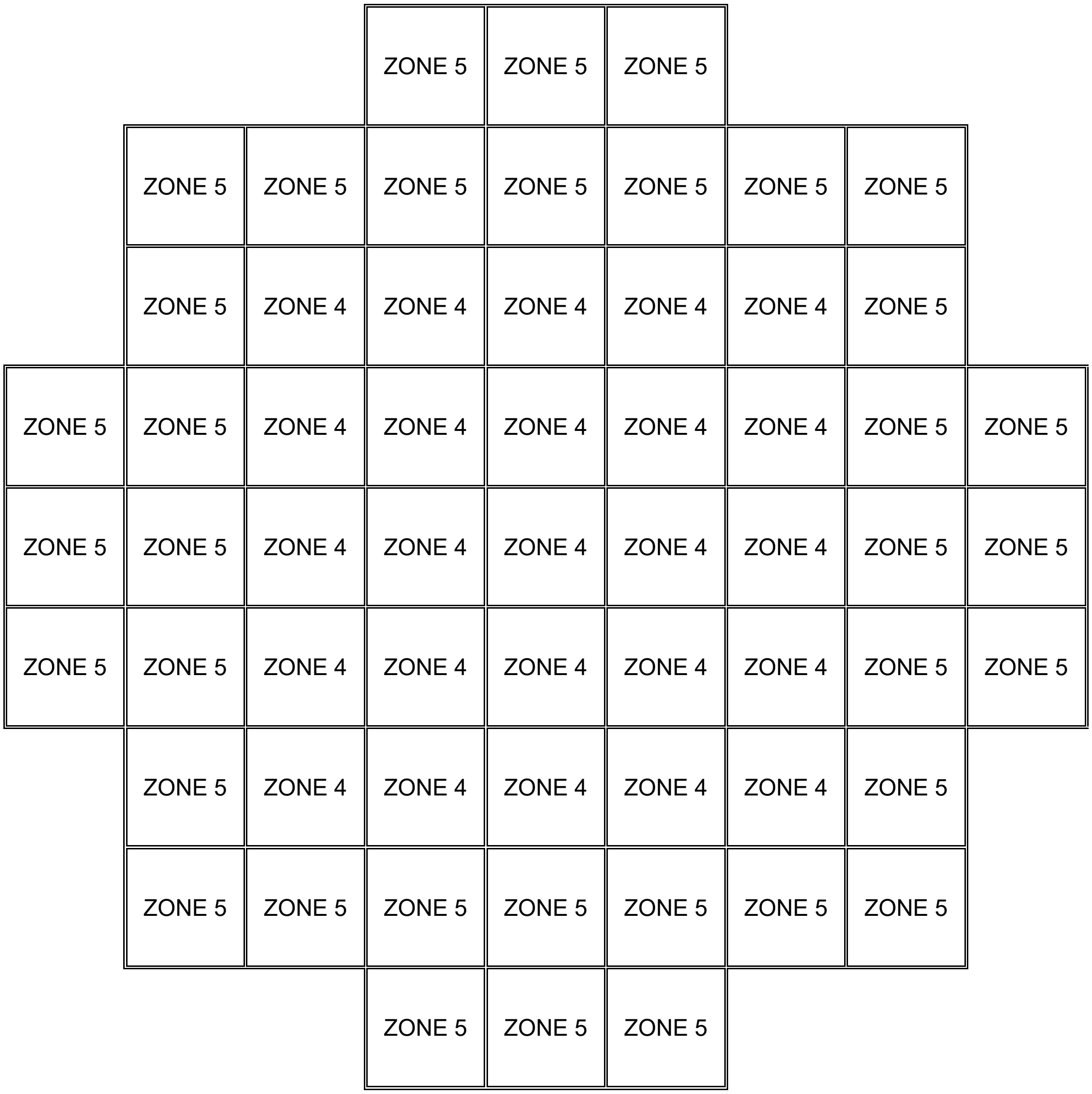
Figure 1-21
Heat Load Zoning Configuration Number 5 for Type 2 61BTH DSCs

			ZONE 5	ZONE 5	ZONE 5			
	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	
	ZONE 4	ZONE 6	ZONE 6	ZONE 6	ZONE 6	ZONE 6	ZONE 4	
ZONE 5	ZONE 4	ZONE 6	ZONE 1	ZONE 1	ZONE 1	ZONE 6	ZONE 4	ZONE 5
ZONE 5	ZONE 4	ZONE 6	ZONE 1	ZONE 1	ZONE 1	ZONE 6	ZONE 4	ZONE 5
ZONE 5	ZONE 4	ZONE 6	ZONE 1	ZONE 1	ZONE 1	ZONE 6	ZONE 4	ZONE 5
	ZONE 4	ZONE 6	ZONE 6	ZONE 6	ZONE 6	ZONE 6	ZONE 4	
	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	
			ZONE 5	ZONE 5	ZONE 5			

	Zone 1	**Zone 2**	**Zone 3**	**Zone 4**	**Zone 5**	**Zone 6**
Maximum Decay Heat (kW/FA)	0.22	NA	NA	0.48	0.54	0.70
Maximum Decay Heat per Zone (kW)	1.98	NA	NA	11.52	6.48	11.20
Maximum Decay Heat per DSC (kW)	31.2(1)					

(1) Adjust payload to maintain total DSC heat load within the specified limit.

Figure 1-22
Heat Load Zoning Configuration Number 6 for Type 2 61BTH DSCs



	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Maximum Decay Heat (kW/FA)	NA	NA	NA	0.48	0.54	NA
Maximum Decay Heat per Zone (kW)	NA	NA	NA	12.00	19.44	NA
Maximum Decay Heat per DSC (kW)	31.2[1]					

[1] Adjust payload to maintain total DSC heat load within the specified limit.

Figure 1-23
Heat Load Zoning Configuration Number 7 for Type 2 61BTH DSCs

			ZONE 5	ZONE 5	ZONE 5			
	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	
	ZONE 4	ZONE 3	ZONE 3	ZONE 3	ZONE 3	ZONE 3	ZONE 4	
ZONE 5	ZONE 4	ZONE 3	ZONE 2	ZONE 2	ZONE 2	ZONE 3	ZONE 4	ZONE 5
ZONE 5	ZONE 4	ZONE 3	ZONE 2	ZONE 2	ZONE 2	ZONE 3	ZONE 4	ZONE 5
ZONE 5	ZONE 4	ZONE 3	ZONE 2	ZONE 2	ZONE 2	ZONE 3	ZONE 4	ZONE 5
	ZONE 4	ZONE 3	ZONE 3	ZONE 3	ZONE 3	ZONE 3	ZONE 4	
	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	ZONE 4	
			ZONE 5	ZONE 5	ZONE 5			

	Zone 1	**Zone 2**	**Zone 3**	**Zone 4**	**Zone 5**	**Zone 6**
Maximum Decay Heat (kW/FA)	NA	0.35	0.393	0.48	0.54	NA
Maximum Decay Heat per Zone (kW)	NA	3.15	6.288	11.52	6.48	NA
Maximum Decay Heat per DSC (kW)	27.4(1)					

(1) Adjust payload to maintain total DSC heat load within the specified limit.

Figure 1-24
Heat Load Zoning Configuration Number 8 for Type 2 61BTH DSCs

			C	C	C			
	A	B	C	C	C	B	A	
	B	B	C	C	C	B	B	
C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	C	C	C
	B	B	C	C	C	B	B	
	A	B	C	C	C	B	A	
			C	C	C			

A	Corner Locations See Note 1	B	Interior Locations See Note 2
C	Interior/Edge Locations See Note 3		

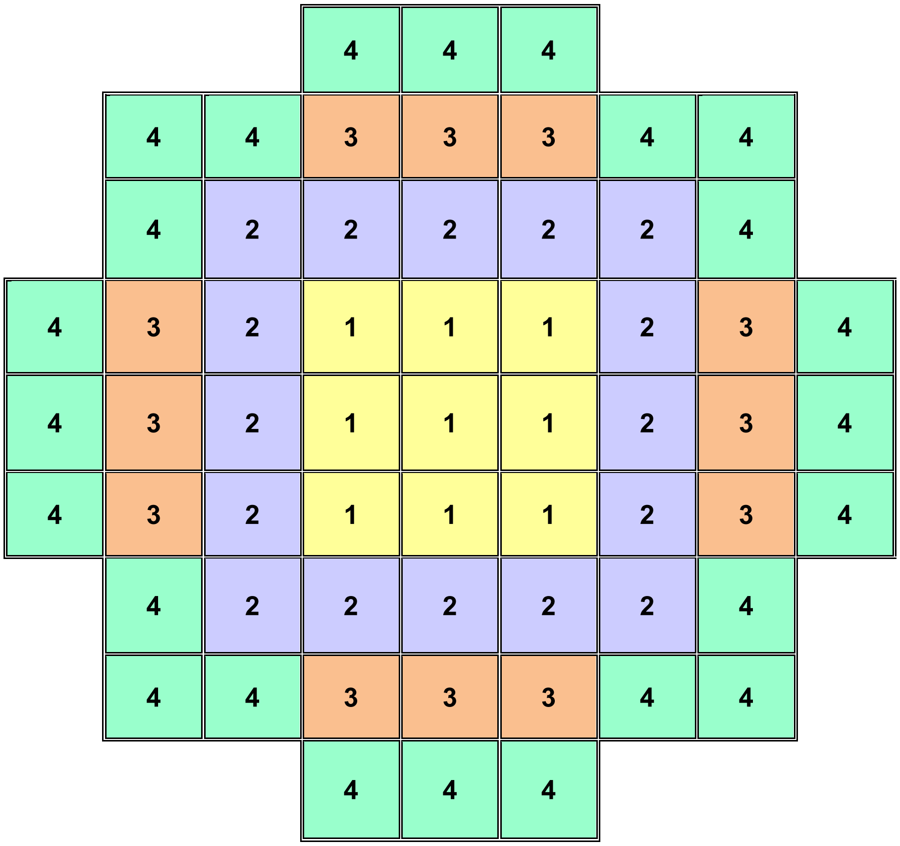
Note 1: When loading up to 4 damaged or 4 failed assemblies, these must be placed in corner “A” locations, and the remaining locations “B” and “C” shall be loaded with intact fuel. If fewer than 4 damaged or 4 failed assemblies are to be stored, the remaining “A” locations may be loaded with intact fuel provided they meet the respective damaged or failed enrichment limits of Table 1-1w1. Damaged and failed fuel shall not be mixed, i.e., up to four damaged assemblies may be stored, or up to four failed assemblies may be stored in “A” locations.

Note 2: If loading more than four damaged assemblies, place first four damaged assemblies in the corner “A” locations per Note 1, and up to 12 additional damaged assemblies in these interior “B” locations, with the remaining intact in a 61BTH Basket. The maximum lattice average initial enrichment of assemblies (damaged or intact stored in the 2x2 cells) is limited to the “Five or More Damaged Assemblies” column of Table 1-1w. For the Type 2 DSC containing failed fuel assemblies, this enrichment is limited to the “and up to 12 Damaged Assemblies” column of Table 1-1w1.

Note 3: If loading more than 16 damaged assemblies, place the first 57 damaged assemblies in the interior/edge "C" and the interior “B” locations. Place the remaining four intact or damaged assemblies in the corner "A" locations. The maximum lattice average initial enrichments of assemblies is limited to the "Up to 4 Intact Assemblies" or "Up to 4 Damaged Assemblies" column of Table 1-1x.

Note 4: For HLZC's 11-13: The maximum number of damaged fuel assemblies that can be loaded is 16. Damaged fuel assemblies cannot be placed in the interior/edge “C” locations.

Figure 1-25
Location of Damaged and Failed Fuel Assemblies inside 61BTH DSC



	Zone 1	Zone 2	Zone 3	Zone 4
Maximum Decay Heat (kW/FA)	0.393	0.48	0.35	0.35
Maximum Decay Heat per Zone (kW)	3.54	7.68	4.2	8.4
Maximum Decay Heat per DSC (kW)	22.0[(1)]			

Note 1: Adjust payload to maintain total canister heat load within the specified limit.

Figure 1-25a
Heat Load Zoning Configuration No. 9 for Type 1 or Type 2 61BTH DSC

			4	4	4			
	4	4	3	3	3	4	4	
	4	2	2	2	2	2	4	
4	3	2	1	1	1	2	3	4
4	3	2	1	1	1	2	3	4
4	3	2	1	1	1	2	3	4
	4	2	2	2	2	2	4	
	4	4	3	3	3	4	4	
			4	4	4			

	Zone 1	Zone 2	Zone 3	Zone 4
Maximum Decay Heat (kW/FA)	0.393	0.48(2)	1.20(2)	0.48(2)
Maximum Decay Heat per Zone (kW)	3.54	7.68	14.4	11.52
Maximum Decay Heat per DSC (kW)	31.2(1)			

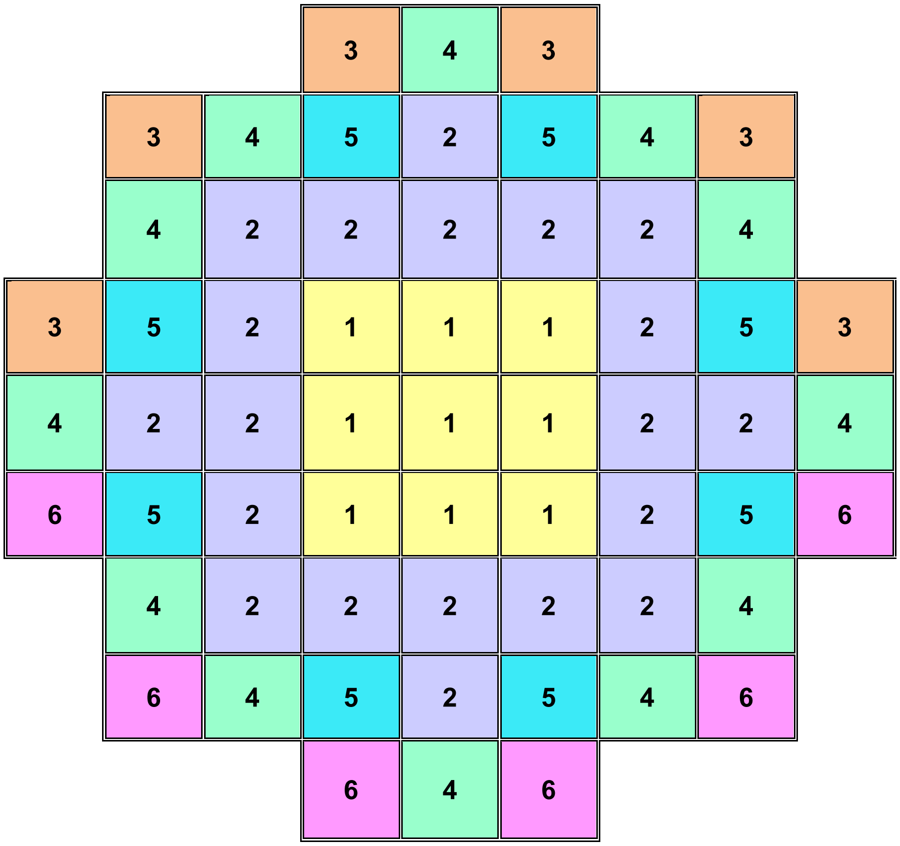
Note 1: Adjust payload to maintain total canister heat load within the specified limit.
Note 2: If the maximum decay heat per SFA in Zone 3 is greater than 0.9 kW, the maximum decay heat per FA in Zone 2 and Zone 4 shall be less than or equal to 0.393 kW.

Figure 1-25b
Heat Load Zoning Configuration No. 10 for Type 2 61BTH DSC

			P	P	P			
	P	P	I	I	I	P	P	
	P	I	I	I	I	I	P	
P	I	I	I	I	I	I	I	P
P	I	I	I	I	I	I	I	P
P	I	I	I	I	I	I	I	P
	P	I	I	I	I	I	P	
	P	P	I	I	I	P	P	
			P	P	P			

P = Peripheral Location
I = Inner Location

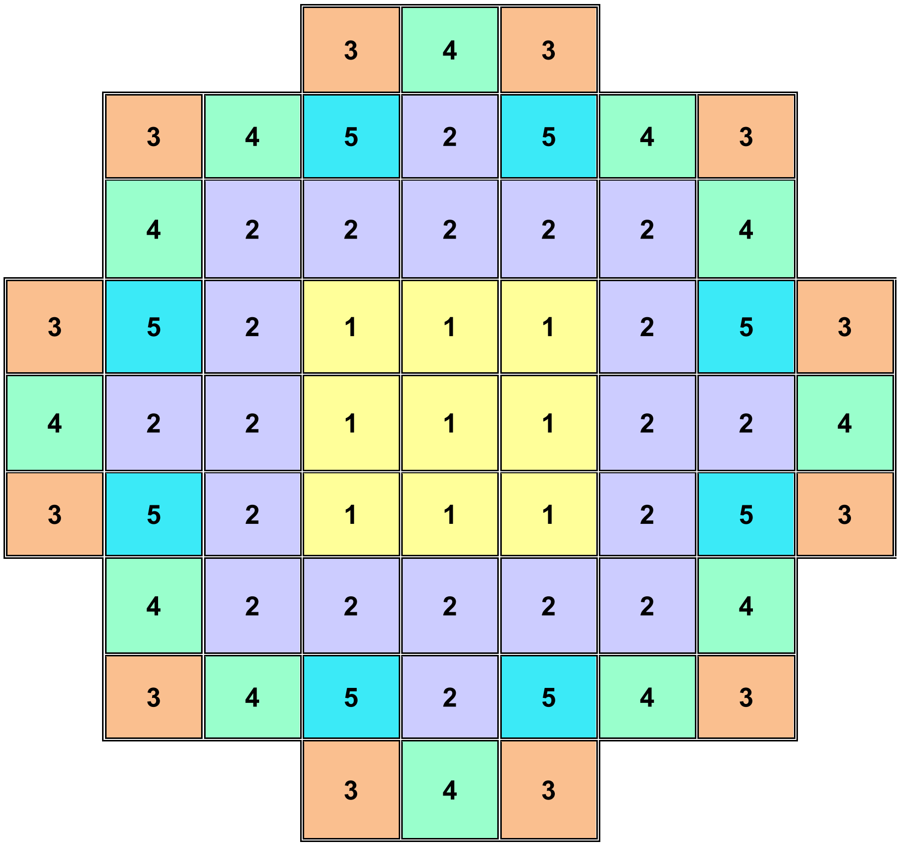
Figure 1-25c
Location of Peripheral and Inner Fuel Locations for the 61BTH DSC



	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Maximum Decay Heat (kW/FA)	0.393	0.393	1.6	0.7	0.48	1.7
Number of assemblies	9	20	6	12	8	6
Maximum Decay Heat per Zone (kW)	3.54	7.86	9.60	8.40	3.84	10.20
Maximum Decay Heat per DSC (kW)	31.2[(1)]					

Note 1: Adjust payload to maintain total canister heat load within the specified limit.

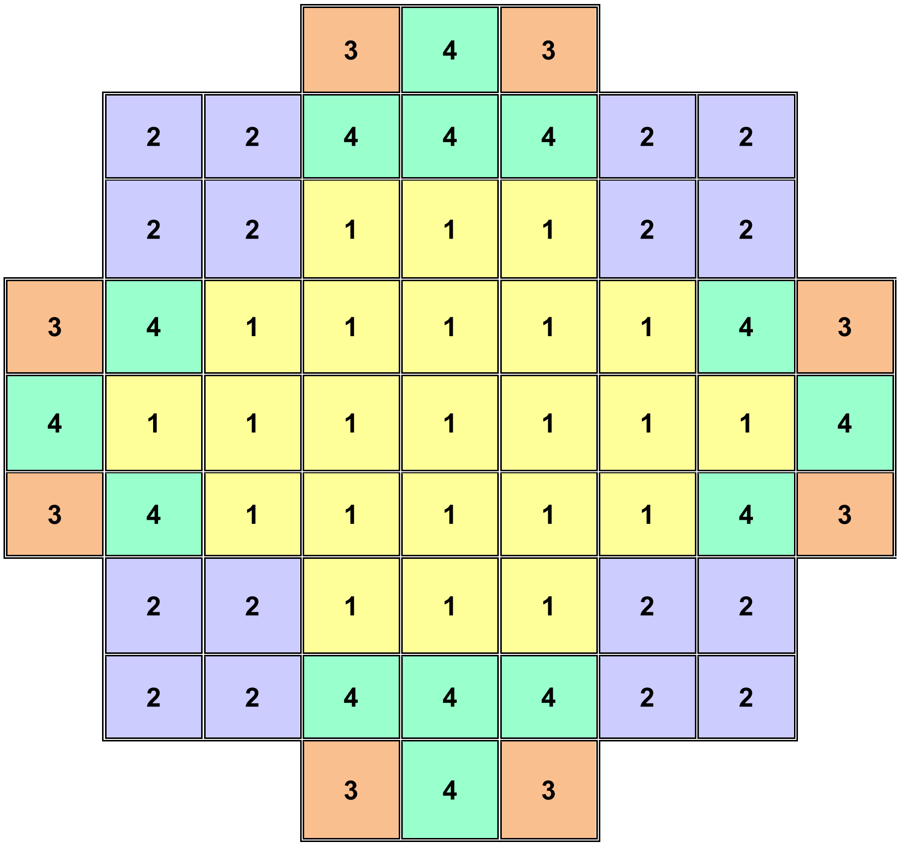
Figure 1-25d
Heat Load Zoning Configuration No. 11 for Type 2 61BTH DSC



	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Maximum Decay Heat (kW/FA)	0.3	0.393	1.375	0.9	0.48
Number of assemblies	9	20	12	12	8
Maximum Decay Heat per Zone (kW)	2.70	7.86	16.50	10.80	3.84
Maximum Decay Heat per DSC (kW)	31.2$^{(1)}$				

Note 1: Adjust payload to maintain total canister heat load within the specified limit.

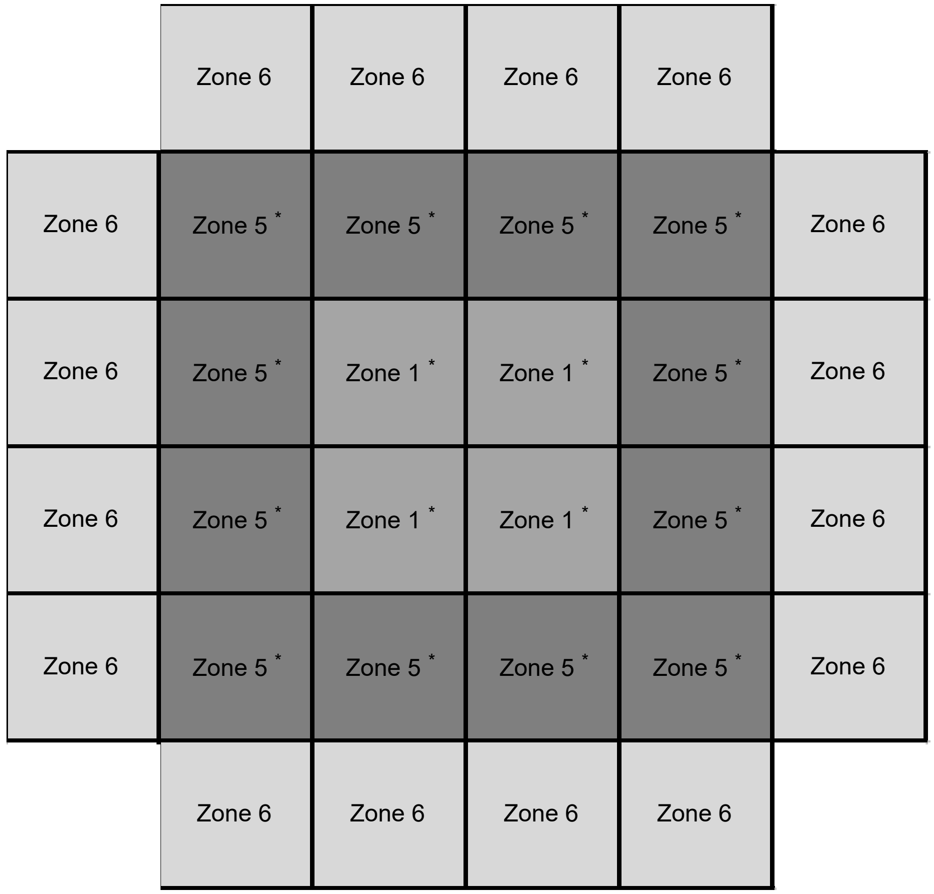
Figure 1-25e
Heat Load Zoning Configuration No. 12 for Type 2 61BTH DSC



	Zone 1	Zone 2	Zone 3	Zone 4
Maximum Decay Heat (kW/FA)	0.3	0.5	1	1
Number of assemblies	23	16	8	14
Maximum Decay Heat per Zone (kW)	6.9	8	8	14
Maximum Decay Heat per DSC (kW)	31.2[(1)]			

Note 1: Adjust payload to maintain total canister heat load within the specified limit.

Figure 1-25f
Heat Load Zoning Configuration No. 13 for Type 2 61BTH DSC



* denotes location where INTACT or DAMAGED FUEL ASSEMBLY can be stored.

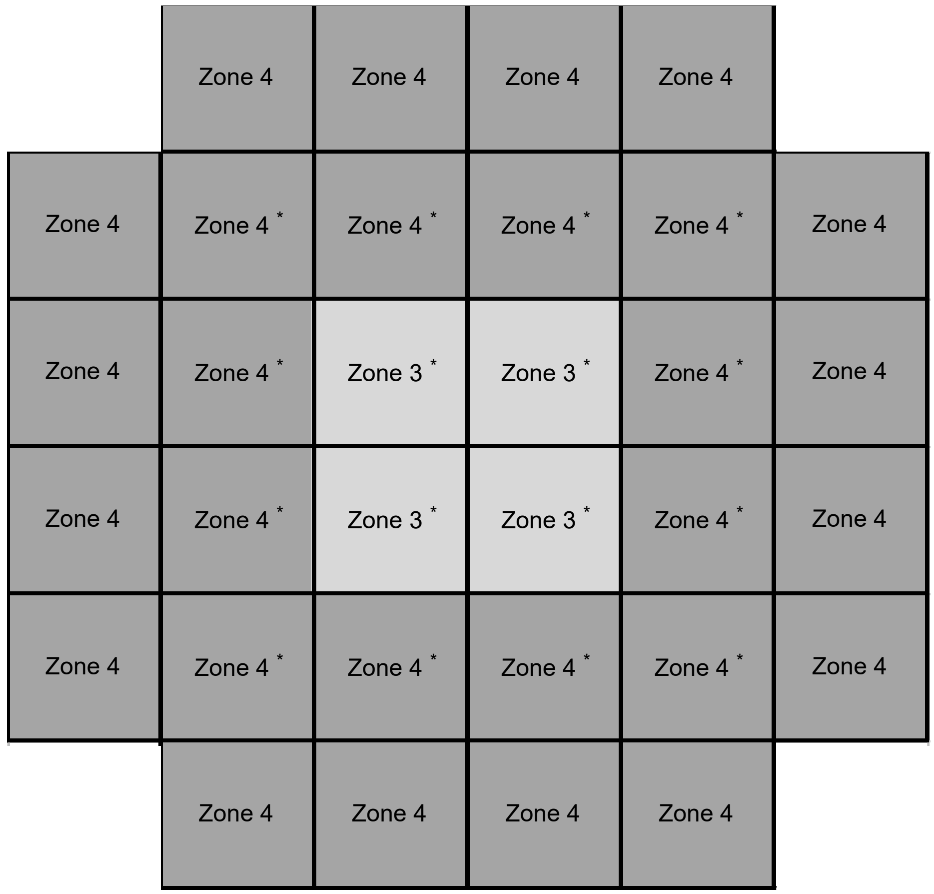
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Max. Decay Heat / FA (kW)	0.6	N/A	N/A	N/A	1.3(1)	1.5
Max. Decay Heat / Zone (kW)	2.4	N/A	N/A	N/A	15.6	24.0
Max. Decay Heat / DSC (kW)	40.8(2)					

Notes:

1: 1.2 kW per FA is the maximum decay heat allowed for damaged fuel assemblies.

2: Adjust payload to maintain 40.8 kW heat load.

Figure 1-26
Heat Load Zoning Configuration Number 1 for 32PTH1-S, 32PTH1-M and 32PTH1-L DSCs (Type 1 Baskets)



* denotes location where INTACT or DAMAGED FUEL ASSEMBLY can be stored.

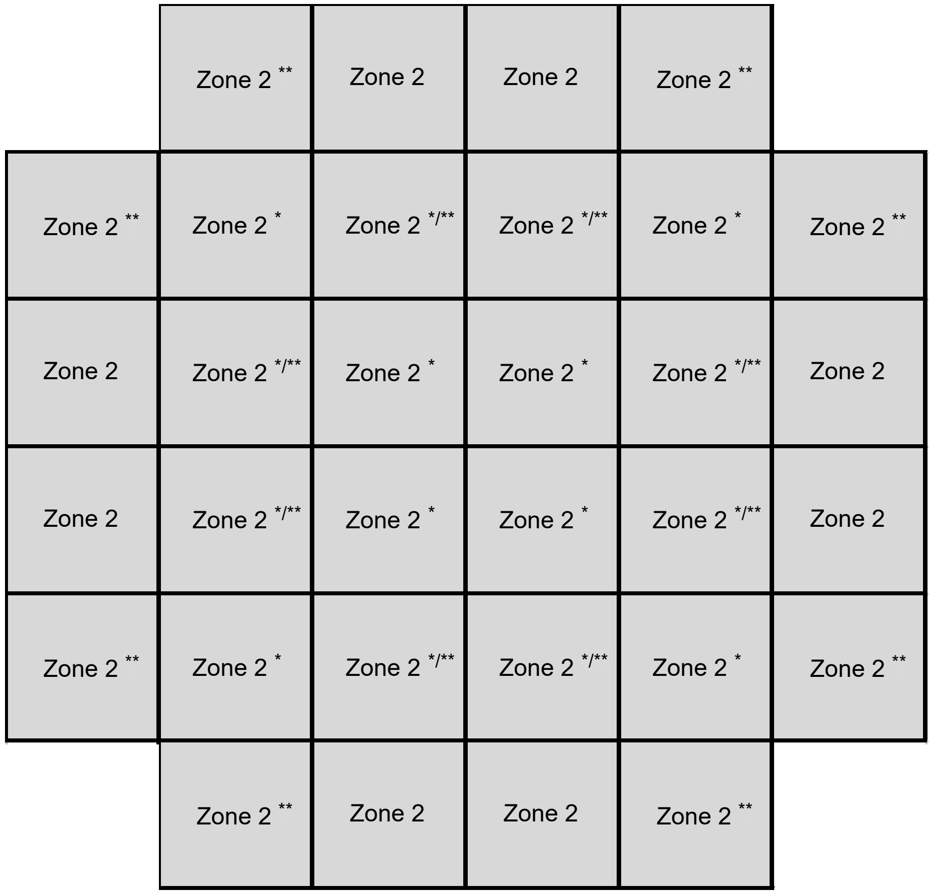
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Max. Decay Heat / FA (kW)	N/A	N/A	0.96(2)	0.98(2)	N/A	N/A
Max. Decay Heat / Zone (kW)	N/A	N/A	3.84	27.44	N/A	N/A
Max. Decay Heat / DSC (kW)	31.2(1)					

Notes:

1: Adjust payload to maintain 31.2 kW heat load.

2: The fuel qualification table corresponding to 1.0 kW/FA shall be used to determine burnup, cooling time, and enrichments corresponding to these heat loads.

Figure 1-27
Heat Load Zoning Configuration Number 2 for 32PTH1-S, 32PTH1-M and 32PTH1-L DSCs
(Type 1 or Type 2 Baskets)



* denotes location where INTACT or DAMAGED FUEL ASSEMBLY can be stored.

** denotes location where FAILED FUEL can be stored.

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Max. Decay Heat / FA (kW)	N/A	0.8	N/A	N/A	N/A	N/A
Max. Decay Heat / Zone (kW)	N/A	24.0	N/A	N/A	N/A	N/A
Max. Decay Heat / DSC (kW)	24.0(1) (2)					

Notes:

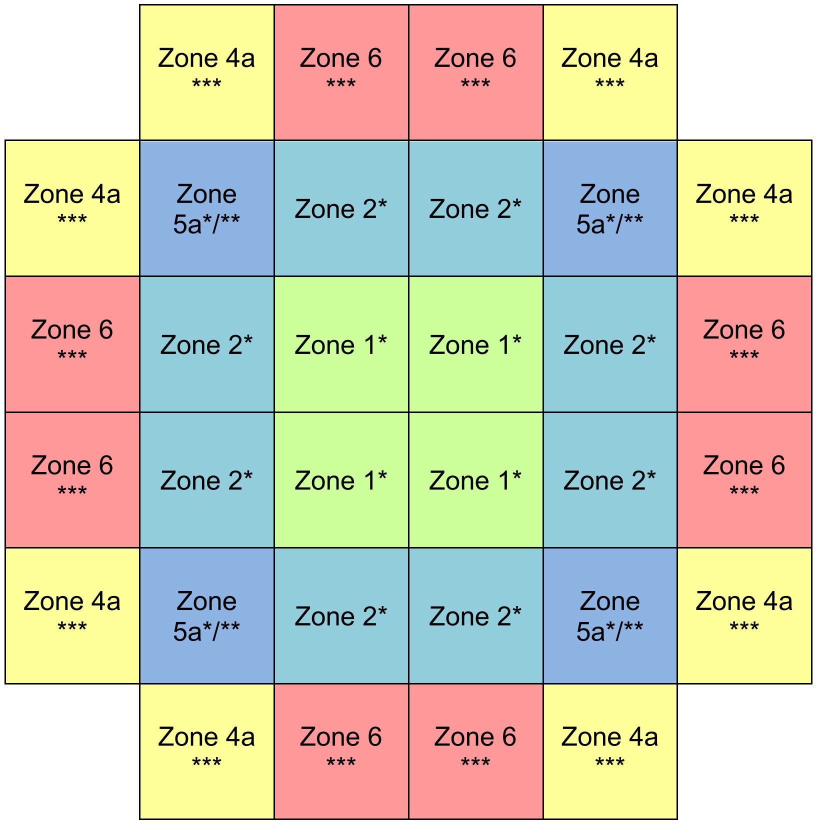
1: Adjust payload to maintain total canister heat load within the specified limit.

2: If FAILED FUEL is stored, the maximum canister heat load is 12.8 kW.

3: If FAILED FUEL is stored at any location denoted by **, INTACT FUEL ASSEMBLIES shall not be stored in any Zone 2 location, and in addition DAMAGED FUEL ASSEMBLIES shall not be stored in any location denoted by *.

4: If FAILED FUEL is stored at any location denoted by **, the remaining ** locations shall be loaded with either FAILED FUEL, Dummy Assemblies or remain empty.

Figure 1-28
Heat Load Zoning Configuration Number 3 for 32PTH1-S, 32PTH1-M and 32PTH1-L DSCs (Type 1 or Type 2 Baskets)



* denotes an interior location where a DAMAGED FUEL ASSEMBLY can be stored.
** denotes location where failed fuel can (FFC) can be stored.
*** denotes a periphery location where a DAMAGED FUEL ASSEMBLY can be stored.

	Zone 1	Zone 2	Zone 3	Zone 4a	Zone 5a	Zone 6
Max. Decay Heat /FA (kW)	0.6	0.8	N/A	1.0	1.2(1)	1.5
Max. Decay Heat /Zone (kW)	2.4	6.4	N/A	8.0	4.8	12
Max. Decay Heat / DSC (kW)	31.2 kW (2)					

Notes: (1) The maximum allowable heat load per FFC is 0.8 kW.
(2) Adjust payload to maintain total canister heat load within the specified limit.
(3) DAMAGED FUEL ASSEMBLIES may be loaded in locations denoted by * or ***, but not both. If a DAMAGED FUEL ASSEMBLY is loaded in a location denoted by ***, FFC shall not be stored.

Figure 1-28a
Heat Load Zoning Configuration No. 4 for 32PTH1-S, 32PTH1-M and 32PTH1-L DSCs (Type 1 or Type 2 Baskets)

	Zone 7	Zone 7	Zone 7	Zone 7	
Zone 7	Zone 7	Zone 7	Zone 7	Zone 7	Zone 7
Zone 7	Zone 7	Zone 7	Zone 7	Zone 7	Zone 7
Zone 7	Zone 7	Zone 7	Zone 7	Zone 7	Zone 7
Zone 7	Zone 7	Zone 7	Zone 7	Zone 7	Zone 7
	Zone 7	Zone 7	Zone 7	Zone 7	

	Zone 7
Max. Decay Heat /FA (kW)	1.1
Max. Decay Heat / Zone (kW)	35.2
Max. Decay Heat / DSC (kW)	35.2

Figure 1-28b
Heat Load Zoning Configuration No. 5 for 32PTH1-S, 32PTH1-M and 32PTH1-L DSCs
(Type 1 Basket)

	Zone 7	Zone 7	Zone 7	Zone 7	
Zone 7	Zone 8	Zone 8	Zone 8	Zone 8	Zone 7
Zone 7	Zone 8	Zone 7	Zone 7	Zone 8	Zone 7
Zone 7	Zone 8	Zone 7	Zone 7	Zone 8	Zone 7
Zone 7	Zone 8	Zone 8	Zone 8	Zone 8	Zone 7
	Zone 7	Zone 7	Zone 7	Zone 7	

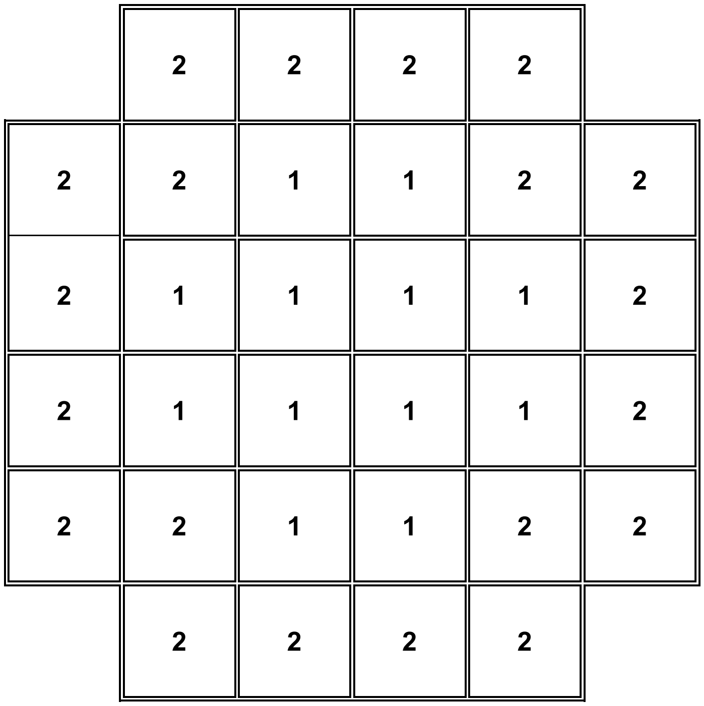
	Zone 7	Zone 8
Max. Decay Heat /FA (kW)	1.1	1.3
Max. Decay Heat / Zone (kW)	22.0	15.6
Max. Decay Heat / DSC (kW)	37.6	

Figure 1-28c
Heat Load Zoning Configuration No. 6 for 32PTH1-S, 32PTH1-M and 32PTH1-L DSCs
(Type 1 Basket)

			2	2	2			
	2	2	2	2	2	2	2	
	2	2	2	1	2	2	2	
2	2	2	1	1	1	2	2	2
2	2	1	1	1	1	1	2	2
2	2	2	1	1	1	2	2	2
	2	2	2	1	2	2	2	
	2	2	2	2	2	2	2	
			2	2	2			

Heat Zone Level	**Zone 1**	**Zone 2**
Max. Decay Heat/FA (kW)	0.3	0.17
Number of FAs/Zone	13	48
Max. Decay Heat/Zone (kW)	3.9	8.2
Max. Decay Heat/DSC (kW)	**12.0**	

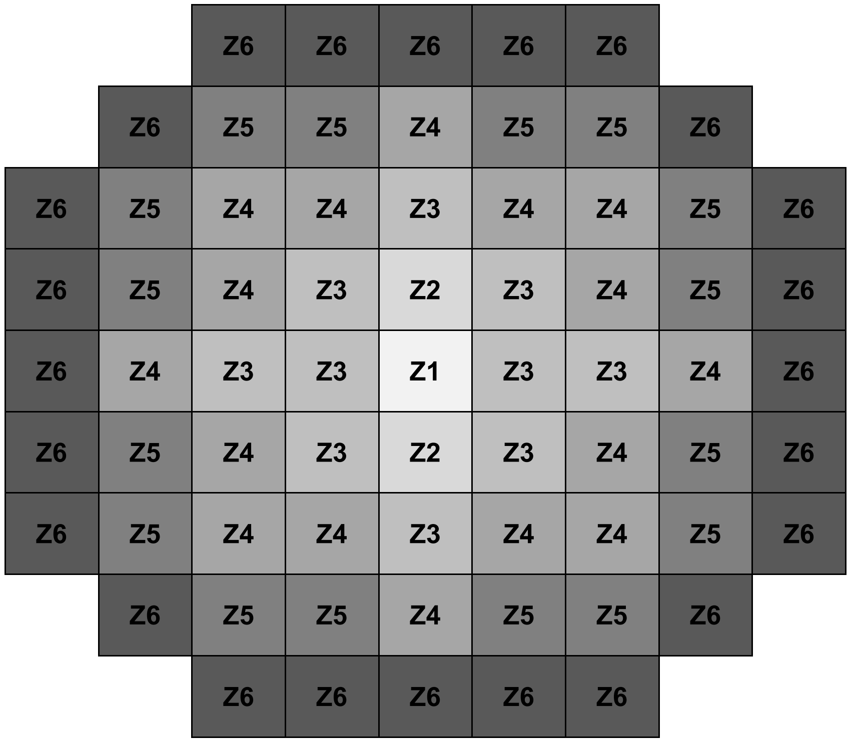
Figure 1-29
Heat Load Zone Configuration for the 61BT DSC Contained in an OS197L TC



Heat Zone Level	**Zone 1**	**Zone 2**
Max. Decay Heat/FA (kW)	0.6	0.4
Number of FAs/Zone	12	20
Max. Decay Heat/Zone (kW)	7.2	8.0
Max. Decay Heat/DSC (kW)	**13.0** (1)	

(1) Maximum decay heat load allowed in the OS197L TC.

Figure 1-30
Heat Load Zone Configuration for the 32PT DSC Contained in an OS197L TC



	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Max. Decay Heat (kW/FA)[(3)]	0.10	0.27	0.30	0.40	0.55	0.45
Number of Fuel Assemblies[(1)]	1	2	10	16	16	24
Max. Decay Heat per Zone (kW)[(3)]	0.10	0.54	3.0	6.4	8.8	10.8
Max. Decay Heat per DSC (kW)	26.0[(2)(3)]					

[(1)] Total number of fuel assemblies is 69.
[(2)] Adjust payload to maintain the total DSC heat load within the specified limit.
[(3)] Reduce the maximum decay heat to 70% of the listed values for LaCrosse fuel assembly. The total decay heat for LaCrosse fuel assembly is 18.2 kW per DSC.

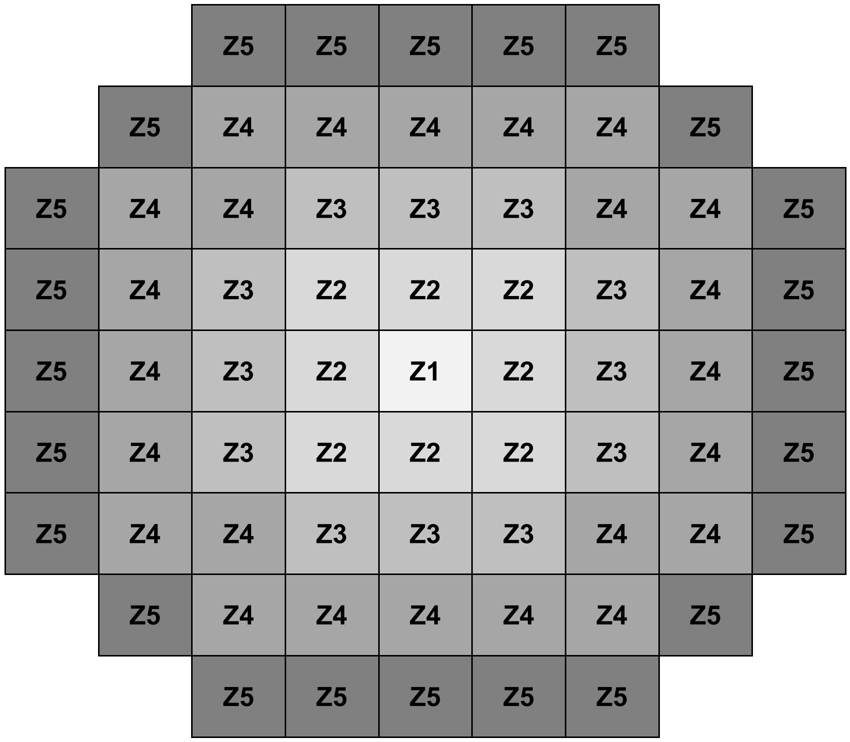
Figure 1-31
Heat Load Zoning Configuration Number 1 for 69BTH DSCs

		Z5	Z5	Z5	Z5	Z5		
	Z5	Z4	Z4	Z4	Z4	Z4	Z5	
Z5	Z4	Z4	Z3	Z3	Z3	Z4	Z4	Z5
Z5	Z4	Z3	Z2	Z2	Z2	Z3	Z4	Z5
Z5	Z4	Z3	Z2	Z1	Z2	Z3	Z4	Z5
Z5	Z4	Z3	Z2	Z2	Z2	Z3	Z4	Z5
Z5	Z4	Z4	Z3	Z3	Z3	Z4	Z4	Z5
	Z5	Z4	Z4	Z4	Z4	Z4	Z5	
		Z5	Z5	Z5	Z5	Z5		

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Max. Decay Heat (kW/FA)[(4)]	0.25	0.0 [(1)]	0.40	0.60	0.50
Number of Fuel Assemblies[(2)]	1	0	12	24	24
Max. Decay Heat per Zone (kW)[(4)]	0.25	0	4.8	14.4	12.0
Max. Decay Heat per DSC (kW)	26.0[(3) (4)]				

(1) Aluminum dummy assemblies replace the fuel assemblies in Zone 2.
(2) Total number of fuel assemblies is 61.
(3) Adjust payload to maintain the total DSC heat load within the specified limit.
(4) Reduce the maximum decay heat to 70% of the listed values for LaCrosse fuel assembly. The total decay heat for LaCrosse fuel assembly is 18.2 kW per DSC.

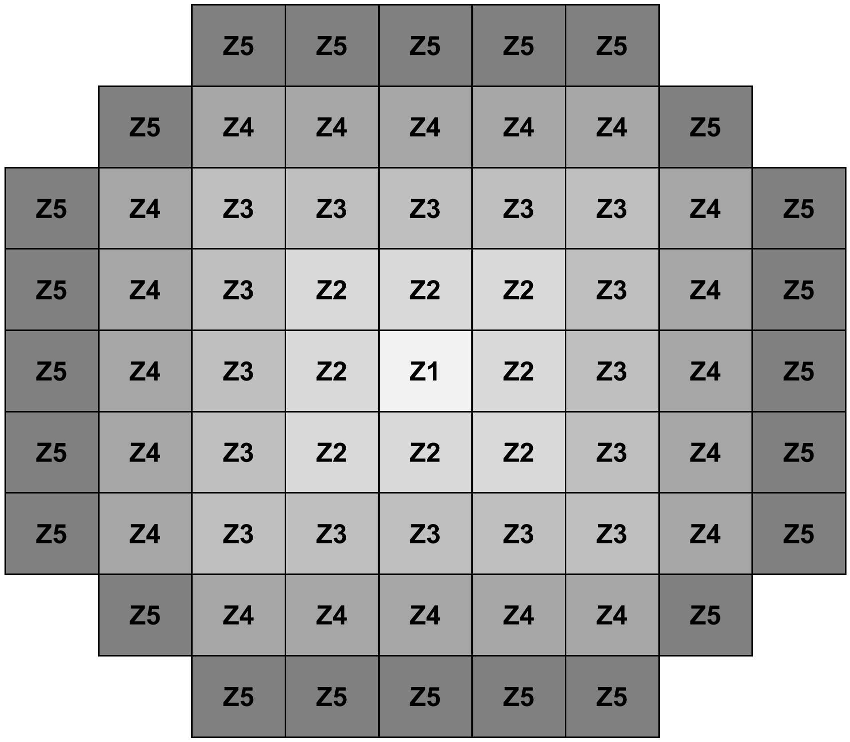
Figure 1-32
Heat Load Zoning Configuration Number 2 for 69BTH DSCs



	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Max. Decay Heat (kW/FA)[4]	0.25	0.0 [1]	0.40	0.60	0.50
Number of Fuel Assemblies[2]	1	0	12	24	24
Max. Decay Heat per Zone (kW)[4]	0.25	0	4.8	14.4	12.0
Max. Decay Heat per DSC (kW)	29.2 [3] [4]				

(1) Aluminum dummy assemblies replace the fuel assemblies in Zone 2.
(2) Total number of fuel assemblies is 61.
(3) Adjust payload to maintain the total DSC heat load within the specified limit.
(4) Reduce the maximum decay heat to 70% of the listed values for LaCrosse fuel assembly. The total decay heat for LaCrosse fuel assembly is 20.4 kW per DSC.

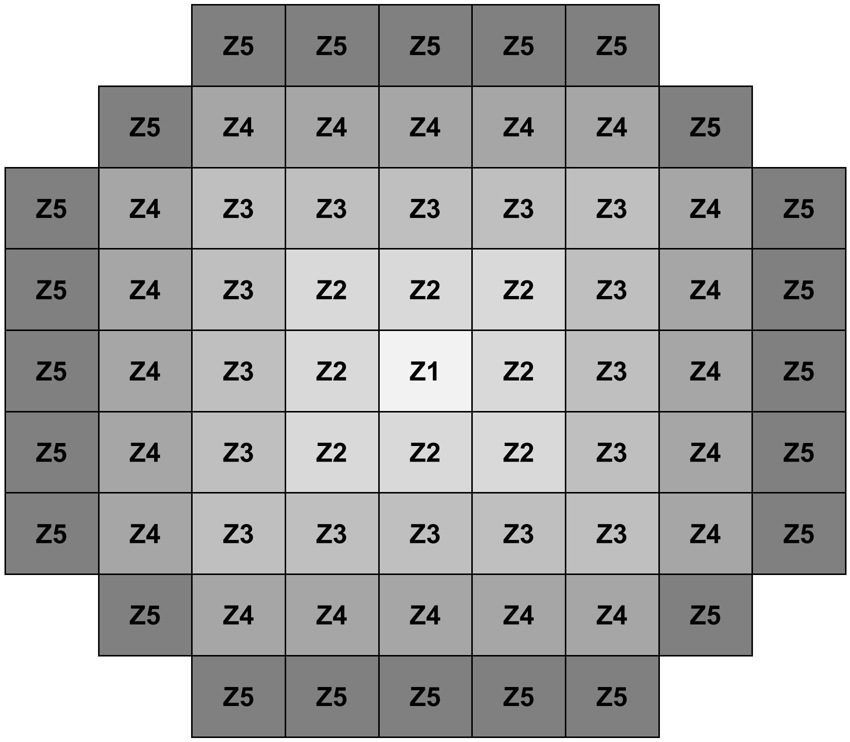
Figure 1-33
Heat Load Zoning Configuration Number 3 for 69BTH DSCs



	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Max. Decay Heat (kW/FA)[3]	0.0 [1]	0.45	0.0 [1]	0.70	0.60
Number of Fuel Assemblies[2]	0	8	0	20	24
Max. Decay Heat per Zone (kW)[3]	0	3.6	0	14.0	14.4
Max. Decay Heat per DSC (kW)	32.0[3]				

[1] The fuel compartment in Zone 1 remains empty. Aluminum dummy assemblies replace the fuel assemblies in Zone 3.
[2] Total number of fuel assemblies is 52.
[3] Reduce the maximum decay heat to 70% of the listed values for LaCrosse fuel assembly. The total decay heat for LaCrosse fuel assembly is 22.4 kW per DSC.

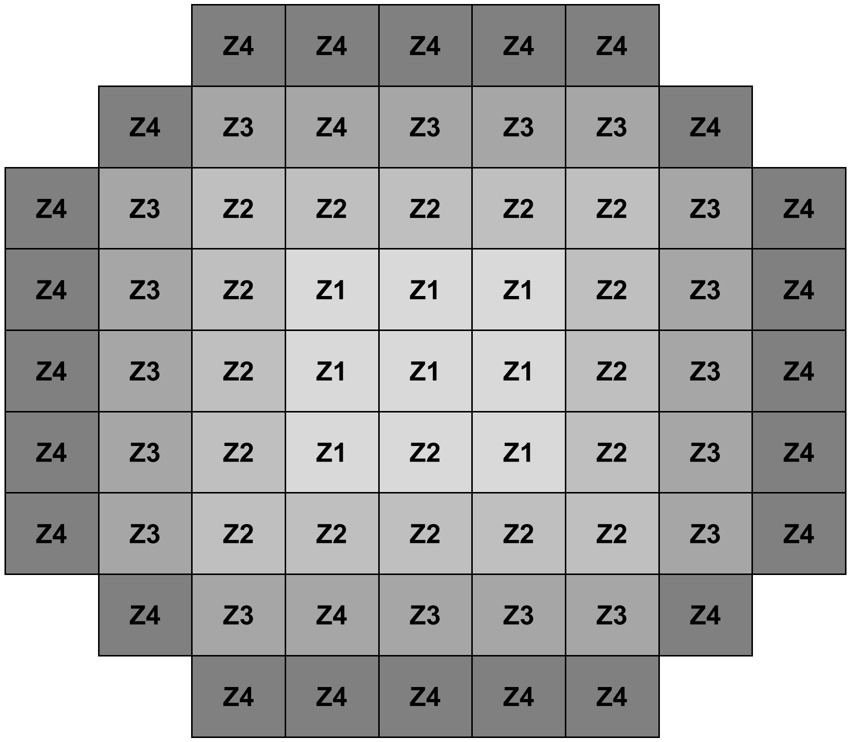
Figure 1-34
Heat Load Zoning Configuration Number 4 for 69BTH DSCs



	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Max. Decay Heat (kW/FA)(2)	0.22	0.35	0.393	0.70	0.488
Number of Fuel Assemblies(1)	1	8	16	20	24
Max. Decay Heat per Zone (kW)(2)	0.22	2.80	6.29	14.00	11.71
Max. Decay Heat per DSC (kW)	35.0(2)				

(1) Total number of fuel assemblies is 69.
(2) Reduce the maximum decay heat to 70% of the listed values for LaCrosse fuel assembly. The total decay heat for LaCrosse fuel assembly is 24.5 kW per DSC.

Figure 1-35
Heat Load Zoning Configuration Number 5 for 69BTH DSC



	Zone 1	Zone 2	Zone 3	Zone 4
Max. Decay Heat (kW/FA)(2)	0.22	0.35	0.393	0.35
Number of Fuel Assemblies(1)	9	16	20	24
Max. Decay Heat per Zone (kW)(2)	1.98	5.6	7.86	8.40
Max. Decay Heat per DSC (kW)	24.0(2)			

(1) Total number of fuel assemblies is 69.
(2) Reduce the maximum decay heat to 70% of the listed values for LaCrosse fuel assembly. The total decay heat for LaCrosse fuel assembly is 16.8 kW per DSC.

Figure 1-36
Heat Load Zoning Configuration Number 6 for 69BTH DSC

		1*				2**		
	3	4				4	3	
2**	4	4				4	4	1*
1*	4	4				4	4	2**
	3	4				4	3	
		2**				1*		

Configurations(1) 1, 2, 3, and 4

	Any one of these three sets of corner locations shall only be utilized to load up to four damaged assemblies with the remaining intact in a 69BTH Basket. The maximum lattice average initial enrichment of fuel assemblies (damaged or intact stored in either set of cells for configuration 1 or configuration 2, or set of cells for configuration 3) is limited to the “up to 4 damaged assemblies” column of Table 1-1kk.
Note (1)	Following the placement of damaged fuel assemblies in either configuration 1 or 2, the remaining configuration 2 or configuration 1 locations shall be used to load up to 4 additional damaged assemblies, with the remaining intact in a 69BTH Basket. The maximum lattice average initial enrichment for these fuel assemblies (damaged or intact stored in configuration 2 or configuration 1 cells available) is limited to the “5 to 8 damaged assemblies” column of Table 1-1kk.
	Following the placement of eight damaged fuel assemblies in the set of corner locations marked with a “*” (configuration 1 cells) and a “**” (configuration 2 cells), the locations in configuration 4 cells or configuration 3 cells shall be used to load up to sixteen additional damaged assemblies, with the remaining intact in a 69BTH Basket. The maximum lattice average initial enrichment for all 24 fuel assemblies (damaged or intact stored in these 24 locations) is limited to the “9 to 24 Damaged Assemblies” column of Table 1-1kk.

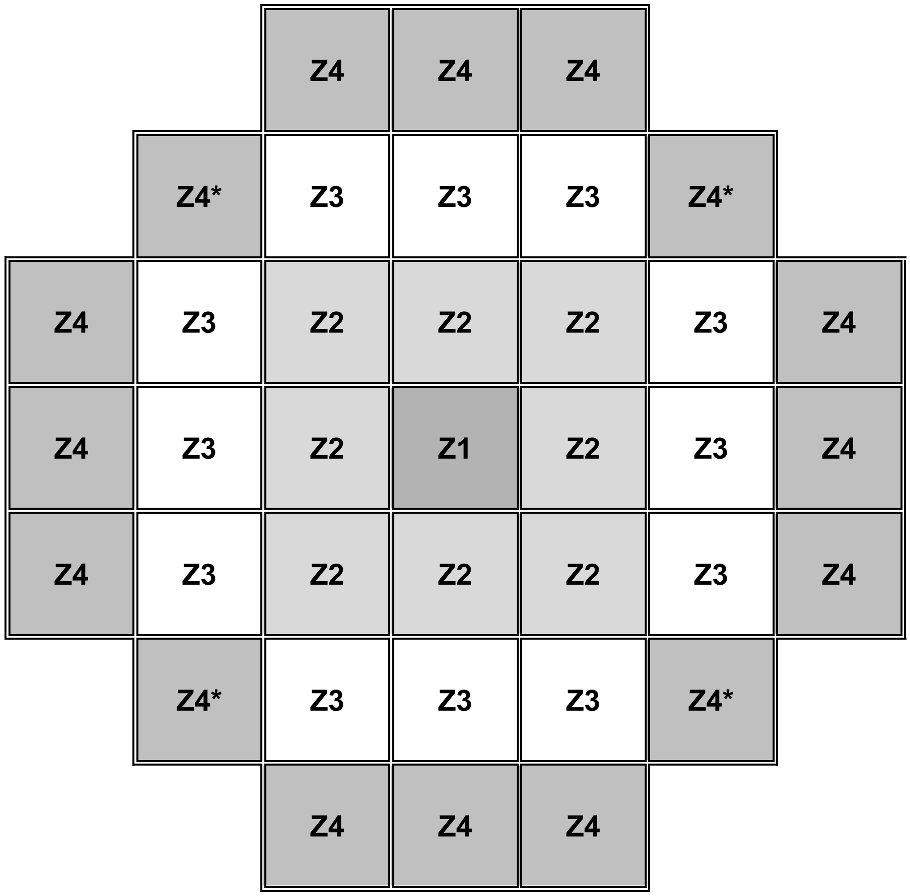
Figure 1-37
Location of Damaged Fuel Assemblies Inside 69BTH DSC

		Z5	Z5	Z5	Z5	Z5		
	Z5	Z5	Z4	Z4	Z4	Z5	Z5	
Z5	Z5	Z3	Z3	Z3	Z3	Z3	Z5	Z5
Z5	Z4	Z3	Z2	Z2	Z2	Z3	Z4	Z5
Z5	Z4	Z3	Z2	Z1	Z2	Z3	Z4	Z5
Z5	Z4	Z3	Z2	Z2	Z2	Z3	Z4	Z5
Z5	Z5	Z3	Z3	Z3	Z3	Z3	Z5	Z5
	Z5	Z5	Z4	Z4	Z4	Z5	Z5	
		Z5	Z5	Z5	Z5	Z5		

	Zone 1[(3)]	Zone 2	Zone 3	Zone 4	Zone 5
Max. Decay Heat (kW/FA) [(4)]	0	0.35	0.40	0.9	0.5
No. of Fuel Assemblies [(1)]	0	8	16	12	32
Max. Decay Heat per Zone (kW)	0	2.80	6.4	10.8	16.0
Max. Decay Heat per DSC (kW)	35.0[(2)] [(4)]				

(1) Total number of fuel assemblies is 68 for HLZC #7
(2) Adjust payload to maintain the total DSC heat load within the specified limit
(3) Zone 1 does not require an aluminum dummy assembly.
(4) Reduce the maximum decay heat to 70% of the listed values for LaCrosse fuel assembly. The total decay heat for LaCrosse fuel assembly is 24.5 kW per DSC

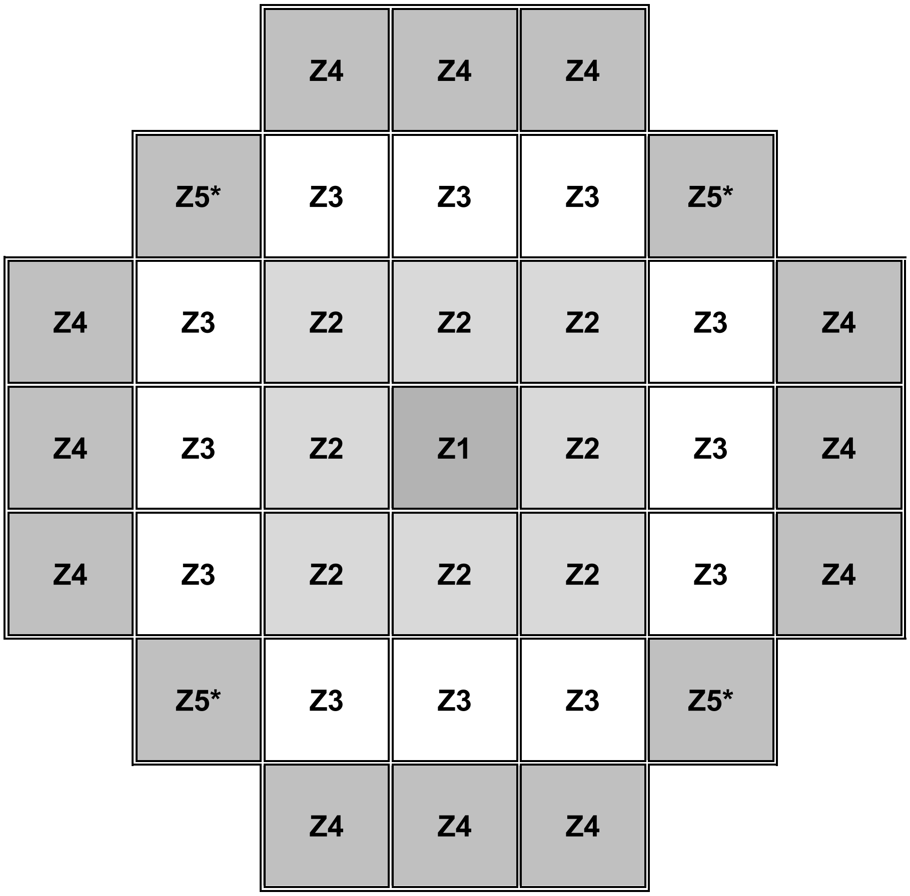
Figure 1-38
Heat Load Zoning Configuration No. 7 for 69BTH DSCs



* Denotes locations where damaged fuel assembly can be stored.

	Zone 1	Zone 2	Zone 3	Zone 4
Max. decay heat (kW/FA)	0.40	0.40	0.60	0.70
Number of fuel assemblies	1	8	12	16
Max. decay heat per zone (kW)	0.4	3.2	7.2	11.2
Max. decay heat per DSC (kW)	22.0			

Figure 1-39
Heat Load Zoning Configuration Number 2 for 37PTH-S and 37PTH-M DSCs



* Denotes locations where either an intact or damaged fuel assembly can be stored.

	Zone 1	**Zone 2**	**Zone 3**	**Zone 4**	**Zone 5**
Max. decay heat (kW/FA)	0.40	0.40	0.70	1.20	1.20
Number of fuel assemblies	1	8	12	12	4
Max. decay heat per zone (kW)	0.4	3.2	8.4	14.4	4.80
Max. decay heat per DSC (kW)	30.0(1)				

(1) Adjust payload of fuel assemblies to maintain the total DSC heat load within the specified limit.

Figure 1-40
Heat Load Zoning Configuration Number 3 for 37PTH-S and 37PTH-M DSCs

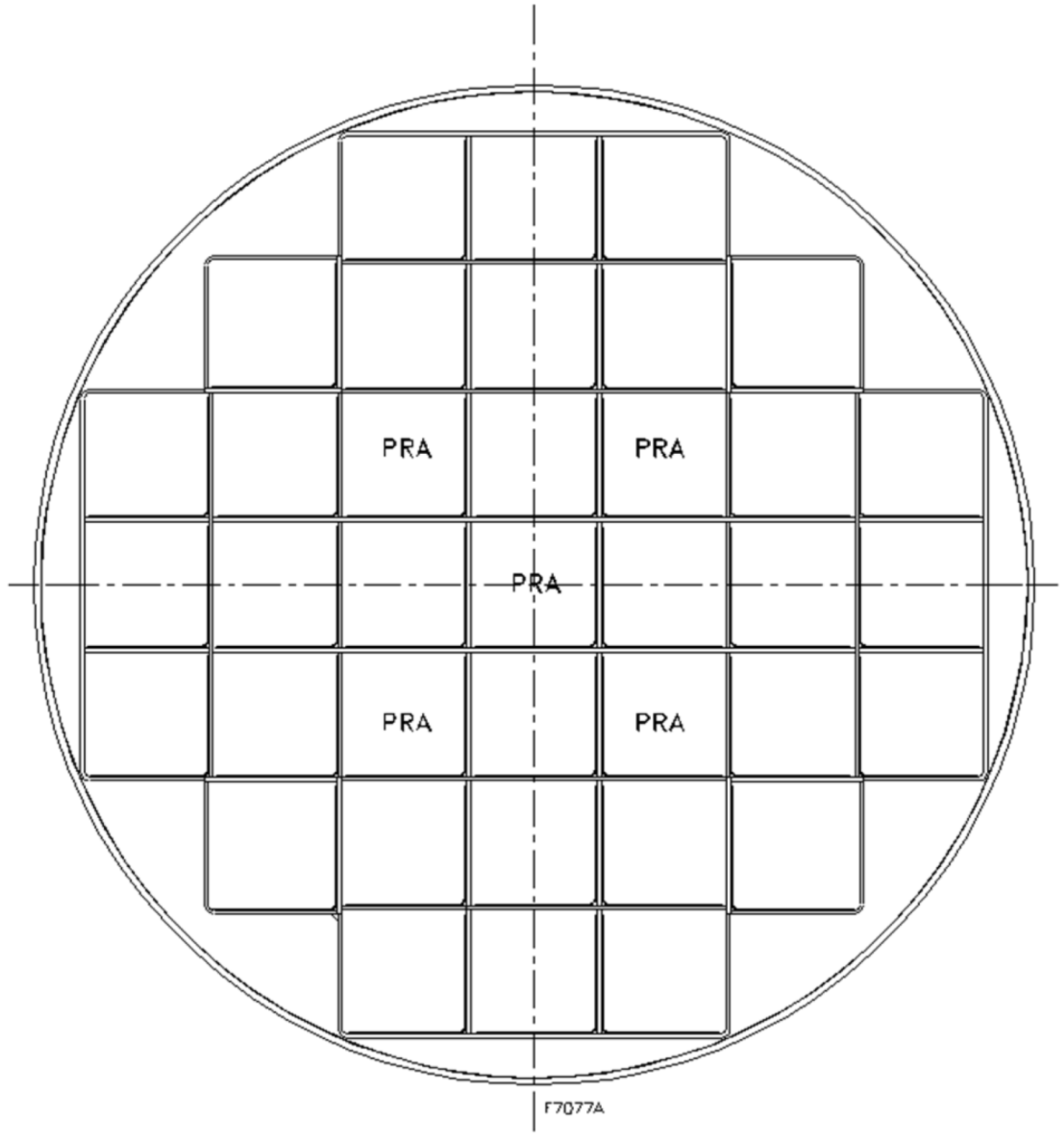


Figure 1-41
Required PRA Locations for the NUHOMS®-37PTH DSC Configuration with Five PRAs

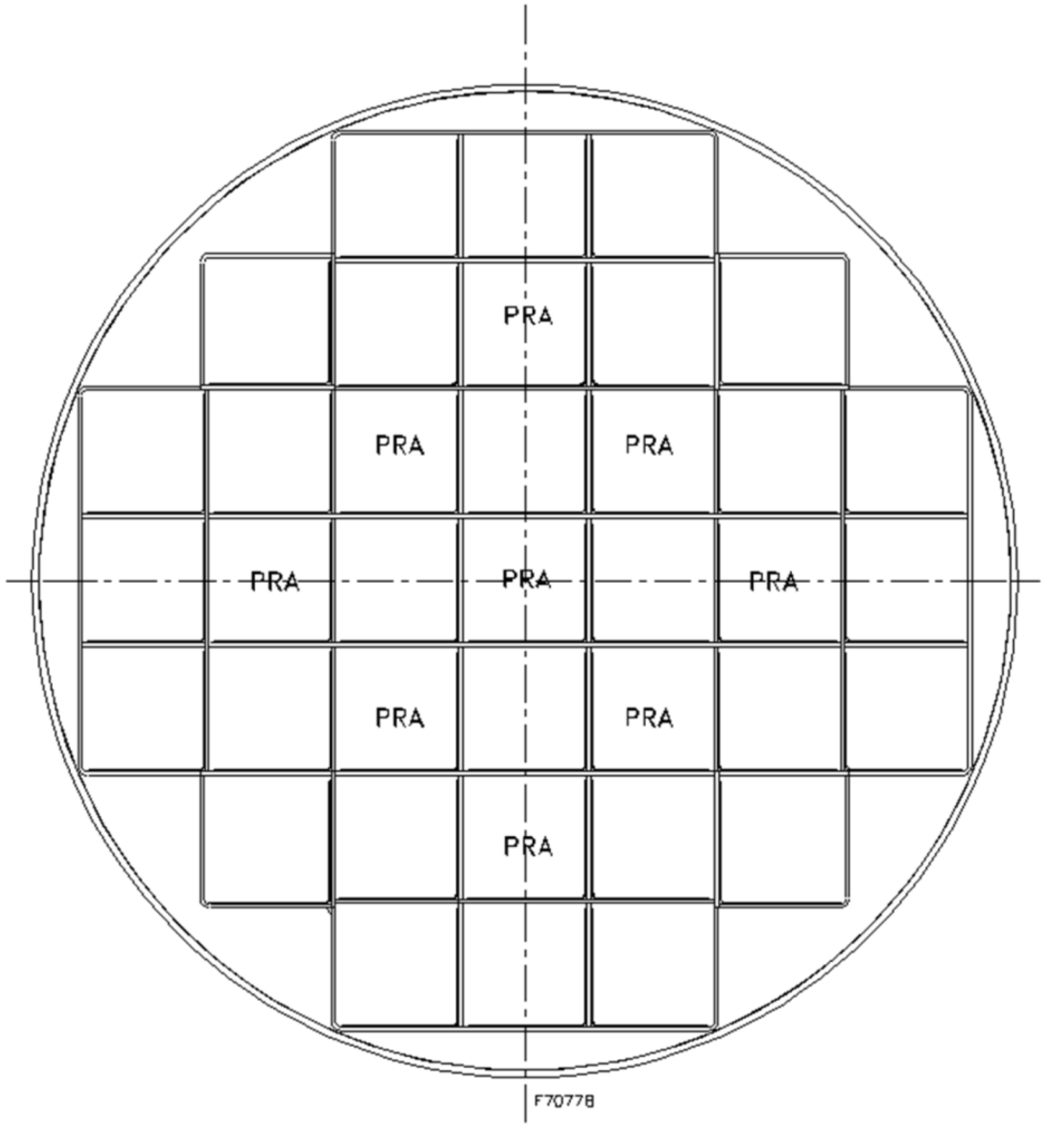


Figure 1-42
Required PRA Locations for the NUHOMS®-37PTH DSC Configuration with Nine PRAs

<u>Enclosure 6 to E-60447</u>

Proposed CoC Appendix C ASME Code Alternatives, CoC 1004 Amendment 18, Revision 0

RENEWED AMENDMENT NUMBER *18* TO COC 1004

APPENDIX C

ASME CODE ALTERNATIVES FOR THE STANDARDIZED NUHOMS® HORIZONTAL MODULAR STORAGE SYSTEM

DOCKET 72-1004

LIST OF TABLES

C. ASME Code Alternatives

Approved ASME Code Alternatives can be found in the following tables.

DSC or TC Model(s)	ASME Code Alternative Topic	Reference Table
24P, 24PHB and 52B DSC	Pressure Boundary Components	Table C-1
24P, 24PHB and 52B DSC	Basket Assembly	Table C-2
61BT DSC	Confinement Boundary	Table C-3
61BT DSC	Basket	Table C-4
32PT DSC	Confinement Boundary	Table C-5
32PT DSC	Basket Assembly	Table C-6
24PTH DSC	Confinement Boundary	Table C-7
24PTH DSC*(2)*	*Type 1 and 2* Basket Assembly	Table C-8
32PTH1 DSC	Confinement Boundary	Table C-9
32PTH1 DSC	Basket Assembly	Table C-10
61BTH DSC	Confinement Boundary	Table C-11
61BTH DSC	Basket	Table C-12
37PTH DSC	Confinement Boundary	Table C-13
37PTH DSC	Basket Assembly	Table C-14
69BTH DSC	Confinement Boundary	Table C-15
69BTH DSC	Basket	Table C-16
All CoC 1004 TCs Except for the OS200 and OS200FC TCs	TC structural components	Table C-17
OS200 and OS200FC TCs	TC structural components	Table C-18

NOTE:

(1) See the CoC Section II.1 Design Features for the applicable ASME code edition and years for each of these tables.

(2) *ASME Code is not applicable for the Type 3 basket assembly in 24PTH-S, 24PTH-L or the 24PTH-S-LC DSCs*

Table C-1
ASME Code Alternatives for NUHOMS®-24P, 24PHB and 52B DSC Pressure Boundary Components

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification and Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NB-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME "N" or "NPT" stamp, or to be ASME Certified.
NB-1132	Attachments with a pressure retaining function, including stiffeners, shall be considered part of the component.	Bottom shield plug and outer bottom cover plate are outside code jurisdiction; these components together are much larger than required to provide stiffening for the inner bottom cover plate; the weld that retains the outer bottom cover plate and with it the bottom shield plug is subject to root and final PT examination.
NB-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NB-2130 is not possible. Material traceability and certification are maintained in accordance with TN's NRC approved QA program.
NB-4121	Material Certification by Certificate Holder	
NB-4240 NB-5230	Full penetration welds are required for pressure boundary closure joints. Weld examination shall be UT or RT with surface PT.	DSC Pressure Boundary Welds: The joint details at the top and bottom end of the DSCs are not full penetration welds and thus do not comply with the requirements of figure NB-4243-1 for Category C flat head closure pressure and containment boundary welds. Volumetric weld inspection (RT or UT) is not practical due to the DSC geometry at the top and bottom closures and due to high radiation at the top closure after fuel loading (ALARA consideration). The inner and outer cover plate closure welds provide redundant closure welds, which are required by the 10 CFR Part 72 license. These welds are partial penetration welds that have been designed using a conservative "weld efficiency" factor of 0.6. Breach of the DSC confinement barriers due to an undetected flaw in any single weld layer is implausible due to the requirement for multi-layer welds. The top and bottom outer cover plate to shell welds and the inner bottom cover plate to shell weld receive a root and final PT. The top inner cover plate to shell weld, which is leak tested, has a final PT only.

Table C-1
ASME Code Alternatives for NUHOMS®-24P, 24PHB and 52B DSC Pressure Boundary Components

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification and Compensatory Measures
NB-6111	All completed pressure retaining systems shall be pressure tested.	The pressure retaining system of the DSC consists of the following components: shell, bottom inner cover plate, siphon and vent block siphon and vent port covers, and top inner cover plates. The bottom cover plates are welded to the shell at the fabricator shop, whereas the top cover plates are field-welded to the shell at the nuclear power plant, following the loading of irradiated nuclear fuel. All other welds made to the pressure boundary, such as the support ring to shell weld, are not part of the pressure boundary and, thus, are not pressure tested. <u>DSC Shell and Bottom Cover Plate Welds:</u> The DSC Shell and inner bottom cover plate are pressure tested during fabrication to the requirements of NB-6000. A helium leak test is performed to demonstrate leakage integrity of this boundary. Since the outer bottom cover plate is installed after the inner bottom cover plate is installed, it cannot be pressure tested. <u>DSC Top Cover Plates Closure Welds:</u> The top closure welds are not completed until the DSC is loaded with irradiated nuclear fuel; therefore, a pressure test is not performed. Multi-layer welds are used for these joints to eliminate potential leakage paths. The inner and outer top closure welds are tested as follows: <u>Inner Top Confinement Boundary Welds:</u> The inner top confinement boundary welds include the following: (1) field weld of inner cover plate to shell weld (including inner top cover plate to vent and siphon block), (2) top of siphon and vent block to shell weld, and (3) field weld of siphon and vent port cover plates to vent and siphon block ports. Weld (1) is helium leak tested in the field. Weld (2) is made in the fabricator shop under controlled conditions and receives a final PT. A pressure test and helium leak test are not practical because of its location. A field leak test of weld (2) is not performed because the current 10 CFR Part 72 license does not require it. Weld (3) is performed in the field with a final PT and without a leak test. A helium leak test cannot be performed on these welds because the vent and siphon ports are covered by the plates. Pressurization would require cutting a hole in the DSC creating a potential leakage point for the long-term storage canister. <u>Outer Top Cover Plate Weld:</u> The outer top cover plate to shell weld receives a root and final PT. It is not leak tested because it is installed following the inner top cover plate.
NB-7000	Overpressure Protection	No overpressure protection is provided for the NUHOMS® DSCs. The function of the DSC is to contain radioactive materials under normal, off-normal and hypothetical accident conditions postulated to occur during transportation and storage. The DSC is designed to withstand the maximum possible internal pressure considering 100% fuel rod failure at maximum accident temperature.
NB-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN's approved QA program.

Table C-1
ASME Code Alternatives for NUHOMS®-24P, 24PHB
and 52B DSC Pressure Boundary Components

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification and Compensatory Measures
NB-5520	NDE personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-2
ASME Code Alternatives for NUHOMS®-24P, 24PHB, and 52B DSC Basket Assembly

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification and Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NF-2130	Material must be supplied by ASME approved material suppliers.	All DSC Basket Assembly sub-components designated as ASME on the DSC drawings are obtained from TN approved suppliers with Certified Material Test Reports (CMTR's). The DSC basket subcomponents listed below have been designated as non-Code. • Guide Sleeves, Over Sleeves, and extraction stops (PWR only) • Neutron Absorber Plates and misc. hardware, such as anti-rotation pin, screws and locknuts, (BWR Only) • Coating for Spacer Discs
NF-4121	Material Certification by Certificate Holder	Material traceability and certification are maintained in accordance with TN's NRC approved QA program.
NF-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN's approved QA program.
NF-5520	NDE Personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-3
ASME Code Alternatives for the NUHOMS®-61BT DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NB-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME "N" or "NPT" stamp, or to be ASME Certified.
NB-1132	Attachments with a pressure retaining function, including stiffeners, shall be considered part of the component.	Bottom shield plug and outer bottom cover plate are outside code jurisdiction; these components together are much larger than required to provide stiffening for the inner bottom cover plate; the weld that retains the outer bottom cover plate and with it the bottom shield plug is subject to root and final PT examination.
NB-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NB-2130 is not possible. Material traceability and certification are maintained in accordance with TN's NRC approved QA program.
NB-4121	Material Certification by Certificate Holder	
NB-4243 and NB-5230	Category C weld joints in vessels and similar weld joints in other components shall be full penetration joints. These welds shall be examined by UT or RT and either PT or MT.	The joints between the top outer and inner cover plates and containment shell are designed and fabricated per ASME Code Case N-595-1. This includes the inner top cover plate weld around the vent and siphon block. The welds are partial penetration welds and the root and final layer are PT examined. The weld between the vent and siphon block and the shell is made at the fabricator's shop and receives a final PT examination.
NB-6100 and 6200	All completed pressure retaining systems shall be pressure tested.	The vent and siphon block is not pressure tested due to the manufacturing sequence. The siphon block weld is helium leak tested when fuel is loaded and then covered with the outer top closure plate.
NB-7000	Overpressure Protection	No overpressure protection is provided for the NUHOMS® DSCs. The function of the DSC is to contain radioactive materials under normal, off-normal and hypothetical accident conditions postulated to occur during transportation and storage. The DSC is designed to withstand the maximum possible internal pressure considering 100% fuel rod failure at maximum accident temperature.

Table C-3
ASME Code Alternatives for the NUHOMS®-61BT DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NB-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN's approved QA program.
NB-5520	NDE Personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-4
ASME Code Alternatives for the NUHOMS®-61BT DSC Basket

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NG/NF-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME “N” or “NPT” stamp, or to be ASME Certified.
NG/NF-2000	Use of ASME Code Material	Some baskets include neutron absorber and aluminum plates that are not ASME Code Class 1 material. They are used for criticality safety and heat transfer, and are only credited in the structural analysis with supporting their own weight and transmitting bearing loads through their thickness.
NG/NF-5520	NDE Personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.
NG/NF-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NG/NF-2130 is not possible. Material traceability and certification are maintained in accordance with TN’s NRC approved QA program.
NG/NF-4121	Material Certification by Certificate Holder	
NG/NF-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN’s approved QA program.

Table C-5
Alternatives to the ASME Code for the NUHOMS®-32PT DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NB-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME "N" or "NPT" stamp, or to be ASME Certified.
NB-1132	Attachments with a pressure retaining function, including stiffeners, shall be considered part of the component.	Bottom shield plug and outer bottom cover plate are outside code jurisdiction; these components together are much larger than required to provide stiffening for the inner bottom cover plate; the weld that retains the outer bottom cover plate and with it the bottom shield plug is subject to root and final PT examination.
NB-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NB-2130 is not possible. Material traceability and certification are maintained in accordance with TN's NRC approved QA program.
NB-4121	Material Certification by Certificate Holder	
NB-4243 and NB-5230	Category C weld joints in vessels and similar weld joints in other components shall be full penetration joints. These welds shall be examined by UT or RT and either PT or MT.	The joints between the top outer and inner cover plates and containment shell are designed and fabricated per ASME Code Case N-595-2, which provides alternative requirements for the design and examination of spent fuel canister closures. This includes the inner top cover plate weld around the vent & siphon block and the vent and siphon block welds to the shell. The closure welds are partial penetration welds and the root and final layer are subject to PT examination (in lieu of volumetric examination) in accordance with the provisions of ASME Code Case N-595-2. The 32PT closure system employs austenitic stainless steel shell, lid materials, and welds. Because austenitic stainless steels are not subject to brittle failure at the operating temperatures of the DSC, crack propagation is not a concern. Thus, multi-level PT examination provides reasonable assurance that flaws of interest will be identified. The PT examination is done by qualified personnel, in accordance with Section V and the acceptance standards of Section III, Subsection NB-5000. This alternative does not apply to other shell confinement welds, i.e., the longitudinal and circumferential welds applied to the DSC shell, and the inner bottom cover plate-to-shell weld which comply with NB-4243 and NB-5230.

Table C-5
Alternatives to the ASME Code for the NUHOMS®-32PT DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NB-6100 and 6200	All pressure retaining components and completed systems shall be pressure tested. The preferred method shall be hydrostatic test.	The NUHOMS®-32PT DSC is pressure tested in accordance with ASME Code Case N-595-2. The shield plug support ring and the vent and siphon block are not pressure tested due to the manufacturing sequence. The support ring is not a pressure-retaining item and the vent and siphon block weld is helium leak tested after fuel is loaded to the same criteria as the inner top closure plate-to-shell weld (ANSI N14.5-1997 leaktight criteria).
NB-7000	Overpressure Protection	No overpressure protection is provided for the NUHOMS® DSCs. The function of the DSC is to contain radioactive materials under normal, off-normal and hypothetical accident conditions postulated to occur during transportation and storage. The DSC is designed to withstand the maximum possible internal pressure considering 100% fuel rod failure at maximum accident temperature.
NB-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN's approved QA program.
NB-5520	NDE Personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-6
Alternatives to the ASME Code for the NUHOMS®-32PT DSC Basket Assembly

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NG-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME "N" or "NPT" stamp, or to be ASME Certified.
NG-2000	Use of ASME Material	Some baskets include neutron absorber and aluminum plates that are not ASME Code Class 1 material. They are used for criticality safety and heat transfer, and are only credited in the structural analysis with supporting their own weight and transmitting bearing loads through their thickness. Material properties in the ASME Code for Type 6061 aluminum are limited to 400 °F to preclude the potential for annealing out the hardening properties. Annealed properties (as published by the Aluminum Association and the American Society of Metals) are conservatively assumed for the solid aluminum rails for use above the Code temperature limits.
NG-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NG-2130 is not possible. Material traceability and certification are maintained in accordance with TN's NRC approved QA program.
NG-4121	Material Certification by Certificate Holder	
NG-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN's approved QA program.
NG-3000/ Section II, Part D, Table 2A	Maximum temperature limit for XM-19 plate material is 800 °F.	Not compliant with ASME Section II Part D Table 2A material temperature limit for XM-19 steel for the postulated transfer accident case (117 °F, loss of sunshade, loss of neutron shield). This is a post-drop accident scenario, where the calculated maximum steady state temperature is 852 °F, the expected reduction in material strength is small (less than 1 ksi by extrapolation), and the only primary stresses in the basket grid are deadweight stresses. The recovery actions following the postulated drop accident are as described in Section 8.2.5 of the UFSAR.
NG-5520	NDE personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-7
Alternatives to the ASME Code for the NUHOMS®-24PTH DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NB-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME “N” or “NPT” stamp, or to be ASME Certified.
NB-1132	Attachments with a pressure retaining function, including stiffeners, shall be considered part of the component.	Bottom shield plug assembly, outer bottom cover plate, lifting posts, grapple ring, grapple ring support are outside code jurisdiction; these components together are much larger than required to provide stiffening for the inner bottom cover plate; the weld that retains the outer bottom cover plate and with it the bottom shield plug is subject to root and final PT examination.
NB-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NB-2130 is not possible. Material traceability and certification are maintained in accordance with TN’s NRC approved QA program.
NB-4121	Material Certification by Certificate Holder	
NB-4243 and NB-5230	Category C weld joints in vessels and similar weld joints in other components shall be full penetration joints. These welds shall be examined by UT or RT and either PT or MT.	The joints between the top outer and inner cover plates (or top forging assembly for the 24PTH-S-LC) and containment shell are designed and fabricated per ASME Code Case N-595-2, which provides alternative requirements for the design and examination of spent fuel canister closures. This includes the inner top cover plate weld around the vent & siphon block and the vent and siphon block welds to the shell. The closure welds are partial penetration welds and the root and final layer are subject to PT examination (in lieu of volumetric examination) in accordance with the provisions of ASME Code Case N-595-2. The 24PTH closure system employs austenitic stainless steel shell, lid materials, and welds. Because austenitic stainless steels are not subject to brittle failure at the operating temperatures of the DSC, crack propagation is not a concern. Thus, multi-level PT examination provides reasonable assurance that flaws of interest will be identified. The PT examination is done by qualified personnel, in accordance with Section V and the acceptance standards of Section III, Subsection NB-5000. This alternative does not apply to other shell confinement welds, i.e., the longitudinal and circumferential welds of the DSC shell, and the inner bottom cover plate-to-shell weld (or bottom forging to shell weld, as applicable) which comply with NB-4243 and NB-5230.

Table C-7
Alternatives to the ASME Code for the NUHOMS®-24PTH DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NB-6100 and 6200	All pressure retaining components and completed systems shall be pressure tested. The preferred method shall be hydrostatic test.	The NUHOMS®-24PTH DSC is pressure tested in accordance with ASME Code Case N-595-2. The shield plug support ring and the vent and siphon block are not pressure tested due to the manufacturing sequence. The support ring is not a pressure-retaining item and the vent and siphon block weld is helium leak tested after fuel is loaded to the same criteria as the inner top closure plate-to-shell weld (ANSI N14.5-1997 leaktight criteria).
NB-7000	Overpressure Protection	No overpressure protection is provided for the NUHOMS® DSCs. The function of the DSC is to contain radioactive materials under normal, off-normal and hypothetical accident conditions postulated to occur during transportation and storage. The DSC is designed to withstand the maximum possible internal pressure considering 100% fuel rod failure at maximum accident temperature.
NB-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN's approved QA program.
NB-5520	NDE Personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-8
Alternatives to the ASME Code for the NUHOMS®-24PTH DSC *Type 1 and 2* Basket Assembly

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NG-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME “N” or “NPT” stamp, or to be ASME Certified.
NG-2000	Use of ASME Material	Some baskets include neutron absorber and aluminum plates that are not ASME Code Class 1 material. They are used for criticality safety and heat transfer, and are only credited in the structural analysis with supporting their own weight and transmitting bearing loads through their thickness. Material properties in the ASME Code for Type 6061 aluminum are limited to 400 °F to preclude the potential for annealing out the hardening properties. Annealed properties (as published by the Aluminum Association and the American Society of Metals) are conservatively assumed for the aluminum transition rails for use above the Code temperature limits.
NG-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NG-2130 is not possible. Material traceability and certification are maintained in accordance with TN’s NRC approved QA program.
NG-4121	Material Certification by Certificate Holder	
NG-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN’s approved QA program.
NG-3000/ Section II, Part D, Table 2A	Maximum temperature limit for Type 304 plate material is 800 °F.	Not compliant with ASME Section II Part D Table 2A material temperature limit for Type 304 steel for the postulated transfer accident case (117 °F, loss of sunshade, loss of neutron shield). This is a post-drop accident scenario, where the calculated maximum steady state temperature is 862 °F, the expected reduction in material strength is small (less than 1 ksi by extrapolation), and the only primary stresses in the basket grid are deadweight stresses. The recovery actions following the postulated drop accident are as described in Section 8.2.5 of the UFSAR.

Table C-8
Alternatives to the ASME Code for the NUHOMS®-24PTH DSC *Type 1 and 2*
Basket Assembly

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NG-3352	Table NG-3352-1 lists the permissible welded joints.	The fusion (spot) type welds between the stainless steel insert plates (straps) and the stainless steel fuel compartment tube are not permissible welds per Table NG-3352-1. These welds are qualified by testing. The required minimum tested capacity of the welded connection (at each side of the tube) shall be 36 Kips (at room temperature). This value is based on a margin of safety (test-to-design) of 1.6, which is larger than the Code-implied margin of safety for Level D loads. The minimum capacity shall be determined by shear tests of individual specimens made from production material. The tests shall be corrected for temperature differences (test-to-design) and for material properties (actual-to-ASME Code minimum values) to demonstrate that the capacity of the welded connection with ASME minimum properties, tested at design temperatures, will meet the 36 Kips test requirement. The capacity of the welded connection is determined from the test of the weld pattern of a typical insert plate to the tube connection. The welds will be visually inspected to confirm that they are located over the insert plates, in lieu of the visual acceptance criteria of NG-5260 which are not appropriate for this type of weld. A joint efficiency (quality) factor of 1.0 is utilized for the fuel compartment longitudinal seam welds. Table NG-3352-1 permits a joint efficiency (quality) factor of 0.5 to be used for full penetration weld examined by ASME Section V visual examination (VT). For the 24PTH DSC, the compartment seam weld is thin, and the weld will be made in one pass. Both surfaces of weld (inside and outside) will be fully examined by VT and therefore a factor of 2 x 0.5=1.0, will be used in the analysis. This is justified as both surfaces of the single weld pass/layer will be fully examined, and the stainless steel material that comprises the fuel compartment tubes is very ductile.
NG-5520	NDE personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-9
Alternatives to the ASME Code for the NUHOMS® 32PTH1 DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NB-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME "N" or "NPT" stamp, or to be ASME Certified.
NB-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NB-2130 is not possible. Material traceability and certification are maintained in accordance with TN's NRC approved QA program.
NB-4121	Material Certification by Certificate Holder	
NB-4243 and NB-5230	Category C weld joints in vessels and similar weld joints in other components shall be full penetration joints. These welds shall be examined by UT or RT and either PT or MT.	The shell to the outer top cover weld, the shell to the inner top cover/shield plug weld (including optional design configurations for the inner top cover as described in the 32PTH1 DSC drawings), the siphon/vent cover welds, and the vent and siphon block welds to the shell are all partial penetration welds. As an alternative to the NDE requirements of NB-5230, for Category C welds, all of these closure welds are multi-layer welds and receive a root and final PT examination, except for the shell to the outer top cover weld. The shell to the outer top cover weld will be a multi-layer weld and receive multi-level PT examination in accordance with the guidance provided in ISG-15 for NDE. The multi-level PT examination provides reasonable assurance that flaws of interest will be identified. The PT examination is done by qualified personnel, in accordance with Section V and the acceptance standards of Section III, Subsection NB-5000. All of these welds are designed to meet the guidance provided in ISG-15 for stress reduction factor.
NB-1132	Attachments with a pressure retaining function, including stiffeners, shall be considered part of the component.	Bottom shield plug and outer bottom cover plate are outside code jurisdiction; these components together are much larger than required to provide stiffening for the inner bottom cover plate; the weld that retains the outer bottom cover plate and with it the bottom shield plug is subject to root and final PT examination.

Table C-9
Alternatives to the ASME Code for the NUHOMS® 32PTH1 DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NB-6100 and 6200	All pressure retaining components and completed systems shall be pressure tested. The preferred method shall be hydrostatic test.	The NUHOMS® 32PTH1 DSC is not a complete vessel until the top closure is welded following placement of fuel assemblies within the DSC. Due to the inaccessibility of the shell and lower end closure welds following fuel loading and top closure welding, as an alternative, the pressure testing of the DSC is performed in two parts. The DSC shell and inner bottom plate/forging (including all longitudinal and circumferential welds), are pressure tested and examined at the fabrication facility. The shell to the inner top cover/shield plug closure weld (including optional design configurations for the inner top cover as described in the 32PTH1 DSC drawings) is pressure tested and examined for leakage in accordance with NB-6300 in the field. The siphon/vent cover welds are not pressure tested; these welds and the shell to the inner top cover/shield plug closure weld (including Optional design configurations for the inner top cover as described in the 32PTH1 DSC drawings) are helium leak tested after the pressure test. Per NB-6324 the examination for leakage shall be done at a pressure equal to the greater of the design pressure or three-fourths of the test pressure. As an alternative, if the examination for leakage of these field welds, following the pressure test, is performed using helium leak detection techniques, the examination pressure may be reduced to ≥1.5 psig. This is acceptable given the significantly greater sensitivity of the helium leak detection method.
NB-7000	Overpressure Protection	No overpressure protection is provided for the NUHOMS® DSCs. The function of the DSC is to contain radioactive materials under normal, off-normal and hypothetical accident conditions postulated to occur during transportation and storage. The DSC is designed to withstand the maximum possible internal pressure considering 100% fuel rod failure at maximum accident temperature.
NB-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN's approved QA program.
NB-5520	NDE Personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-10
Alternatives to the ASME Code for the NUHOMS® 32PTH1 DSC Basket Assembly

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NG-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME “N” or “NPT” stamp, or to be ASME Certified.
NG-2000	Use of ASME Material	Some baskets include neutron absorber and aluminum plates that are not ASME Code Class 1 material. They are used for criticality safety and heat transfer, and are only credited in the structural analysis with supporting their own weight and transmitting bearing loads through their thickness. Material properties in the ASME Code for Type 6061 aluminum are limited to 400 °F to preclude the potential for annealing out the hardening properties. Annealed properties (as published by the Aluminum Association and the American Society of Metals) are conservatively assumed for the aluminum transition rails for use above the Code temperature limits.
NG-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NG-2130 is not possible. Material traceability and certification are maintained in accordance with TN’s NRC approved QA program.
NG-4121	Material Certification by Certificate Holder	
NG-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN’s approved QA program.
NG-3000/ Section II, Part D, Table 2A	Maximum temperature limit for Type 304 plate material is 800 °F.	Not compliant with ASME Section II Part D Table 2A material temperature limit for Type 304 steel for the postulated transfer accident case (117 °F, loss of sunshade, loss of neutron shield) and blocked vent accident (117 °F, 40 hr.). The calculated maximum steady state temperatures for transfer accident case and blocked vent accident case are less than 1000 °F. The only primary stresses in the basket grid are deadweight stresses. The ASME Code allows use of SA240 Type 304 stainless steel to temperatures up to 1000 °F, as shown in ASME Code, Section II, Part D, Table 1A. In the temperature range of interest (near 800 °F), the S_m values for SA240 Type 304 shown in ASME Code, Section II Part D, Table 2A are identical to the allowable S values for the same material shown in Section B, Part D, Table 1A. The recovery actions following these accident scenarios are as described in the UFSAR.

Table C-10
Alternatives to the ASME Code for the NUHOMS® 32PTH1 DSC Basket Assembly

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NG-3352	Table NG-3352-1 lists the permissible welded joints.	The fusion welds between the stainless steel insert plates and the stainless fuel compartment tube are not included in Table NG-3352-1. These welds are qualified by testing. The required minimum tested capacity of the welded connection (at each side of the tube) shall be 45 kips (at room temperature). The capacity shall be demonstrated by qualification and production testing. Testing shall be performed using, or corrected to, the lowest tensile strength of material used in the basket assembly or to minimum specified tensile strength. Testing may be performed on individual welds, or on weld patterns representative of one wall of the tube. ASME Code Section IX does not provide tests for qualification of these type of welds. Therefore, these welds are qualified using Section IX to the degree applicable together with the testing described here. The welds will be visually inspected to confirm that they are located over the insert plates, in lieu of the visual acceptance criteria of NG-5260 which are not appropriate for this type of weld. A joint efficiency (quality) factor of 1.0 is utilized for the fuel compartment longitudinal seam welds. Table NG-3352-1 permits a joint efficiency (quality) factor of 0.5 to be used for full penetration weld examined by ASME Section V visual examination (VT). For the 32PTH1 DSC, the compartment seam weld is thin and the weld will be made in one pass. Both surfaces of weld (inside and outside) will be fully examined by VT and therefore a factor of 2 x 0.5=1.0, will be used in the analysis. This is justified as both surfaces of the single weld pass/layer will be fully examined, and the stainless steel material that comprises the fuel compartment tubes is very ductile.
NG-5520	NDE personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-11
ASME Code Alternatives for the NUHOMS®-61BTH DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NB-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME “N” or “NPT” stamp, or to be ASME Certified.
NB-1132	Attachments with a pressure retaining function, including stiffeners, shall be considered part of the component.	Bottom shield plug and outer bottom cover plate are outside code jurisdiction; these components together are much larger than required to provide stiffening for the inner bottom cover plate; the weld that retains the outer bottom cover plate and with it the bottom shield plug is subject to root and final PT examination.
NB-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NB-2130 is not possible. Material traceability and certification are maintained in accordance with TN’s NRC approved QA program.
NB-4121	Material Certification by Certificate Holder	
NB-4243 and NB-5230	Category C weld joints in vessels and similar weld joints in other components shall be full penetration joints. These welds shall be examined by UT or RT and either PT or MT.	The shell to the outer top cover weld, the shell to the inner top cover/weld, the siphon/vent cover welds and the vent and siphon block welds to the shell are all partial penetration welds. As an alternative to the NDE requirements of NB-5230 for Category C welds, all of these closure welds will be multi-layer welds and receive a root and final PT examination, except for the shell to the outer top cover weld. The shell to the outer top cover weld will be a multi-layer weld and receive multi-level PT examination in accordance with the guidance provided in ISG-15 for NDE. The multi-level PT Examination provides reasonable assurance that flaws of interest will be identified. The PT examination is done by qualified personnel, in accordance with Section V and the acceptance standards of Section III, Subsection NB-5000. All of these welds will be designed to meet the guidance provided in ISG-15 for stress reduction factor.

Table C-11
ASME Code Alternatives for the NUHOMS®-61BTH DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NB-6100 and 6200	All completed pressure retaining systems shall be pressure tested.	The 61BTH is not a complete or "installed" pressure vessel until the top closure is welded following placement of Fuel Assemblies within the DSC. Due to the inaccessibility of the shell and lower end closure welds following fuel loading and top closure welding, as an alternative, the pressure testing of the DSC is performed in two parts. The DSC shell (including all longitudinal and circumferential welds) is pressure tested and examined at the fabrication facility. The shell to the inner top cover closure weld are pressure tested and examined for leakage in accordance with NB-6300 in the field. The siphon/vent cover welds are not pressure tested; these welds and the shell to the inner top cover closure weld are helium leak tested after the pressure test. Per NB-6324 the examination for leakage shall be done at a pressure equal to the greater of the design pressure or three-fourths of the test pressure. As an alternative, if the examination for leakage of these field welds, following the pressure test, is performed using helium leak detection techniques, the examination pressure may be reduced to ≥ 1.5 psig. This is acceptable given the significantly greater sensitivity of the helium leak detection method.
NB-7000	Overpressure Protection	No overpressure protection is provided for the NUHOMS® DSCs. The function of the DSC is to contain radioactive materials under normal, off-normal and hypothetical accident conditions postulated to occur during transportation and storage. The DSC is designed to withstand the maximum possible internal pressure considering 100% fuel rod failure at maximum accident temperature.
NB-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN's approved QA program.
NB-5520	NDE personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-12
ASME Code Alternatives for the NUHOMS®-61BTH DSC Basket

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NG/NF-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME “N” or “NPT” stamp, or to be ASME Certified.
NG/NF-2000	Use of ASME Material	Some baskets include neutron absorber and aluminum plates that are not ASME Code Class 1 material. They are used for criticality safety and heat transfer, and are only credited in the structural analysis with supporting their own weight and transmitting bearing loads through their thickness. Material properties in the ASME Code for Type 6061 aluminum are limited to 400 °F to preclude the potential for annealing out the hardening properties. Annealed properties (as published by the Aluminum Association and the American Society of Metals) are conservatively assumed for the aluminum transition rails for use above the Code temperature limits.
NG/NF-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NG/NF-2130 is not possible. Material traceability and certification are maintained in accordance with TN’s NRC approved QA program.
NG/NF-4121	Material Certification by Certificate Holder	
NG-3352	Table NG-3352-1 lists the permissible welded joints and quality factors.	The fuel compartment tubes may be fabricated from sheet with full penetration seam weldments. Per Table NG-3352-1 a joint efficiency (quality) factor of 0.5 is to be used for full penetration weldments examined in accordance with ASME Section V visual examination (VT). A joint efficiency (quality) factor of 1.0 is utilized for the fuel compartment longitudinal seam welds (if present) with VT examination. This is justified because the compartment seam weld is thin and the weldment is made in one pass; and both surfaces of the weldment (inside and outside) receive 100% VT examination. The 0.5 quality factor, applicable to each surface of the weldment, results is a quality factor of 1.0 since both surfaces are 100% examined. In addition, the fuel compartments have no pressure retaining function and the stainless steel material that comprises the fuel compartment tubes is very ductile.

Table C-12
ASME Code Alternatives for the NUHOMS®-61BTH DSC Basket

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NG-4231.1	*Tack welds used to secure alignment shall either be removed completely, when they have served their purpose, or their stopping and starting ends shall be properly prepared by grinding or other suitable means so that they may be satisfactorily incorporated into the final weld. Tacks welds shall be made by qualified welders using qualified welding procedures. When tack welds are to become part of finished weld, they shall be visually examined in accordance with NG-5261 and defective tack welds shall be removed.*	*Along with the option to full comply with NG-4231.1, if practicable, the proposed alternative option to Paragraph NG-4231.1 is as follows:* *The use of a qualified inspector to perform the VT examination required by NG-4231.1 may be omitted for the welds of R45 Transition Rails of the NUHOMS® 61BTH Type 2 DSC when the following additional requirements are met:* *1. The welder or weld supervisor shall check the tack welds for defects per NG-4231.1 and shall either remove or repair the defective tack welds in the process of fit-up and alignment.* *2. The welding procedure specification (WPS) and procedure qualification record (PQR) of the production welds shall contain the following additional qualification requirements for each joint geometry:* *A. Three coupons shall be prepared that simulate the joint geometry that will be used in production. A tack weld shall be completed and broken.* *B. The weld shall be completed with parameters that result in the minimum weld filler deposition rate allowed by the WPS.* *C. The coupons shall be cross-sectioned, etched, and verified under magnification that the weld has satisfactorily incorporated the tack weld and the defect has been removed.* *3. An additional PQR shall be prepared in accordance with ASME Section IX with coupons that were produced with three broken tack welds per coupon at fit-up. The coupons shall pass all applicable testing requirements of ASME Section IX.* 4. *Production welds shall be made by either an automated welding or mechanized welding process. Only the tack weld may be completed by a manual process.*
NG/NF-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN's approved QA program.
NG/NF-5520	NDE personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-13
Alternatives to the ASME Code for the NUHOMS® 37PTH DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 71 Subpart H in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda.	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NB-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME "N" or "NPT" stamp, or to be ASME Certified.
NB-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NB-2130 is not possible. Material traceability and certification are maintained in accordance with TN's NRC approved QA program.
NB-4121	Material Certification by Certificate Holder.	
NB-4243 and NB-5230	Category C weld joints in vessels and similar weld joints in other components shall be full penetration joints. These welds shall be examined by UT or RT and either PT or MT.	The shell to the outer top cover weld, the shell to the inner top cover weld (including optional design configurations for the inner top cover as described in the 37PTH DSC drawings), the siphon/vent cover welds, and the vent and siphon block welds to the shell are all partial penetration welds. As an alternative to the NDE requirements of NB-5230, for Category C welds, all of these closure welds are multi-layer welds and receive a root and final PT examination, except for the shell to the outer top cover weld. The shell to the outer top cover weld will be a multi-layer weld and receive multi-level PT examination in accordance with the guidance provided in ISG-15 (which is incorporated in NUREG-1536, Revision 1) for NDE. The multi-level PT examination provides reasonable assurance that flaws of interest will be identified. The PT examination is done by qualified personnel, in accordance with Section V and the acceptance standards of Section III, Subsection NB-5000. All of these welds are designed to meet the guidance provided in ISG-15 (which is incorporated in NUREG-1536, Revision 1) for stress reduction factor.
NB-1132	Attachments with a pressure retaining function, including stiffeners, shall be considered part of the component.	Bottom shield plug and outer bottom cover plate are outside code jurisdiction; these components together are much larger than required to provide stiffening for the inner bottom cover plate; the weld that retains the outer bottom cover plate and with it the bottom shield plug is subject to root and final PT examination.

Table C-13
Alternatives to the ASME Code for the NUHOMS® 37PTH DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NB-6100 and 6200	All pressure retaining components and completed systems shall be pressure tested. The preferred method shall be hydrostatic test.	The NUHOMS® 37PTH DSC is not a complete vessel until the top closure is welded following placement of fuel assemblies within the DSC. Due to the inaccessibility of the shell and lower end closure welds following fuel loading and top closure welding, as an alternative, the pressure testing of the DSC is performed in two parts. The DSC shell and inner bottom plate/forging (including all longitudinal and circumferential welds), are pressure tested and examined at the fabrication facility. The shell to the inner top cover/shield plug closure weld (including optional design configurations for the inner top cover as described in the 37PTH DSC drawings) is pressure tested and examined for leakage in accordance with NB-6300 in the field. The siphon/vent cover welds are not pressure tested; these welds and the shell to the inner top cover/shield plug closure weld (including Optional design configurations for the inner top cover as described in the 37PTH DSC drawings) are helium leak tested after the pressure test. Per NB-6324 the examination for leakage shall be done at a pressure equal to the greater of the design pressure or three-fourths of the test pressure. As an alternative, if the examination for leakage of these field welds, following the pressure test, is performed using helium leak detection techniques, the examination pressure may be reduced to ≥1.5 psig. This is acceptable given the significantly greater sensitivity of the helium leak detection method.
NB-7000	Overpressure Protection	No overpressure protection is provided for the NUHOMS® DSCs. The function of the DSC is to contain radioactive materials under normal, off-normal and hypothetical accident conditions postulated to occur during transportation and storage. The DSC is designed to withstand the maximum possible internal pressure considering 100% fuel rod failure at maximum accident temperature.
NB-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN's approved QA program.
NB-5520	NDE Personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-14
Alternatives to the ASME Code for the NUHOMS® 37PTH DSC Basket Assembly

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 71 Subpart H in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda.	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NG-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME "N" or "NPT" stamp, or to be ASME Certified.
NG-2000	Use of ASME Material.	Baskets include neutron absorber and aluminum plates that are not ASME Code Class 1 material. They are used for criticality safety and heat transfer, and are only credited in the structural analysis with supporting their own weight and transmitting bearing loads through their thickness. Material properties in the ASME Code for Type 6061 aluminum are limited to 400 °F to preclude the potential for annealing out the hardening properties. Annealed properties (as published by the Aluminum Association and the American Society of Metals) are conservatively assumed for the aluminum transition rails for use above the Code temperature limits.
NG-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NG-2130 is not possible. Material traceability and certification are maintained in accordance with TN's NRC approved QA program.
NG-4121	Material Certification by Certificate Holder.	
NG-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN's approved QA program.
NG-5520	NDE Personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-15
ASME Code Alternatives for the NUHOMS®-69BTH DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 71 Subpart H in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda.	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before those specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, as long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NB-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME “N” or “NPT” stamp, or to be ASME Certified.
NB-1132	Attachments with a pressure retaining function, including stiffeners, shall be considered part of the component.	Bottom shield plug and outer bottom cover plate are outside code jurisdiction; these components together are much larger than required to provide stiffening for the inner bottom cover plate; the weld that retains the outer bottom cover plate and with it the bottom shield plug is subject to root and final PT examination.
NB-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NB-2130 is not possible. Material traceability and certification are maintained in accordance with TN’s NRC approved QA program.
NB-4121	Material Certification by Certificate Holder.	
NB-4243 and NB-5230	Category C weld joints in vessels and similar weld joints in other components shall be full penetration joints. These welds shall be examined by UT or RT and either PT or MT.	The shell to the outer top cover weld, the shell to the inner top cover weld (including optional design configurations for the inner top cover as described in the 69BTH DSC drawings), the siphon/vent cover welds and the vent and siphon block welds to the shell are all partial penetration welds. As an alternative to the NDE requirements of NB-5230 for Category C welds, all of these closure welds will be multi-layer welds and receive a root and final PT examination, except for the shell to the outer top cover weld. The shell to the outer top cover weld will be a multi-layer weld and receive multi-level PT examination in accordance with the guidance provided in ISG-15 (which is incorporated in NUREG-1536, Revision 1) for NDE. The multi-level PT Examination provides reasonable assurance that flaws of interest will be identified. The PT examination is done by qualified personnel, in accordance with Section V and the acceptance standards of Section III, Subsection NB-5000. All of these welds will be designed to meet the guidance provided in ISG-15 (which is incorporated in NUREG-1536, Revision 1) for stress reduction factor.

Table C-15
ASME Code Alternatives for the NUHOMS®-69BTH DSC Confinement Boundary

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NB-6100 and 6200	All completed pressure retaining systems shall be pressure tested.	The 69BTH is not a complete or “installed” pressure vessel until the top closure is welded following placement of Fuel Assemblies within the DSC. Due to the inaccessibility of the shell and lower end closure welds following fuel loading and top closure welding, as an alternative, the pressure testing of the DSC is performed in two parts. The DSC shell (including all longitudinal and circumferential welds) is pressure tested and examined at the fabrication facility. The shell to the inner top cover closure weld are pressure tested and examined for leakage in accordance with NB-6300 in the field. The siphon/vent cover welds are not pressure tested; these welds and the shell to the inner top cover closure weld are helium leak tested after the pressure test. Per NB-6324 the examination for leakage shall be done at a pressure equal to the greater of the design pressure or three-fourths of the test pressure. As an alternative, if the examination for leakage of these field welds, following the pressure test, is performed using helium leak detection techniques, the examination pressure may be reduced to $\geq$ 1.5 psig. This is acceptable given the significantly greater sensitivity of the helium leak detection method.
NB-7000	Overpressure Protection.	No overpressure protection is provided for the NUHOMS® DSCs. The function of the DSC is to contain radioactive materials under normal, off-normal and hypothetical accident conditions postulated to occur during transportation and storage. The DSC is designed to withstand the maximum possible internal pressure considering 100% fuel rod failure at maximum accident temperature.
NB-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN’s approved QA program.
NB-5520	NDE Personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-16
ASME Code Alternatives for the NUHOMS®-69BTH DSC Basket

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 71 Subpart H in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda.	Code edition and addenda other than those specified in CoC Section II.1.b may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.b table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.b may be used, so long the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NG/NF-1100	Requirements for Code Stamping of Components, Code reports and certificates, etc.	Code Stamping is not required. As Code Stamping is not required, the fabricator is not required to hold an ASME "N" or "NPT" stamp, or to be ASME Certified.
NG/NF-2000	Use of ASME Material.	Some baskets include neutron absorber and aluminum plates that are not ASME Code Class 1 material. They are used for criticality safety and heat transfer, and are only credited in the structural analysis with supporting their own weight and transmitting bearing loads through their thickness. Material properties in the ASME Code for Type 6061 aluminum are limited to 400 °F to preclude the potential for annealing out the hardening properties. Annealed properties (as published by the Aluminum Association and the American Society of Metals) are conservatively assumed for the aluminum transition rails for use above the Code temperature limits.
NG/NF-2130	Material must be supplied by ASME approved material suppliers.	Material is certified to meet all ASME Code criteria but is not eligible for certification or Code Stamping if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NG/NF-2130 is not possible. Material traceability and certification are maintained in accordance with TN's NRC approved QA program.
NG/NF-4121	Material Certification by Certificate Holder.	
NG-3352	Table NG 3352-1 lists the permissible welded joints and quality factors.	The fuel compartment tubes may be fabricated from sheet with full penetration seam weldments. Per Table NG-3352-1 a joint efficiency (quality) factor of 0.5 is to be used for full penetration weldments examined in accordance with ASME Section V visual examination (VT). A joint efficiency (quality) factor of 1.0 is utilized for the fuel compartment longitudinal seam welds (if present) with VT examination. This is justified because the compartment seam weld is thin and the weldment is made in one pass; and both surfaces of the weldment (inside and outside) receive 100% VT examination. The 0.5 quality factor, applicable to each surface of the weldment, results is a quality factor of 1.0 since both surfaces are 100% examined. In addition, the fuel compartments have no pressure retaining function and the stainless steel material that comprises the fuel compartment tubes is very ductile.
NG/NF -8000	Requirements for nameplates, stamping & reports per NCA-8000.	The NUHOMS® DSC nameplate provides the information required by 10 CFR Part 71, 49 CFR Part 173 and 10 CFR Part 72 as appropriate. Code stamping is not required for the DSC. QA data packages are prepared in accordance with the requirements of TN's approved QA program.

Table C-16
ASME Code Alternatives for the NUHOMS®-69BTH DSC Basket

Reference ASME Code Section/Article	Code Requirement	Alternatives, Justification & Compensatory Measures
NG/NF-5520	NDE Personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-17
ASME Code Alternatives for the Standardized NUHOMS® System TCs
Except for the OS200 and OS200FC TCs

(Applies to TC structural components only; lead shielding, neutron shielding, and neutron shield jacket of the TC are not addressed by this table)

Reference ASME Code Section/Article	Code Requirement	Exception, Justification and Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.c may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.c table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.c may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NC-1100	Requirements for Code Stamping of Components.	The cask is designed and fabricated to the requirements of Subsection NC, to the maximum extent practical. However, the TC does not have a Code stamp. Code Stamping is not required by 10 CFR Part 72 regulation. Therefore, the fabricator is not required to be ASME Certified.
NC-2000	ASME Code Materials are to be used.	The Cask bottom ram access cover plate is made of ASTM A240, a non-ASME material. This cover plate is a water tight closure used during fuel LOADING/UNLOADING OPERATIONS in the fuel/reactor building only. This is not a pressure boundary component, and its failure does not result in any public safety concerns.
NC-2130	Material must be supplied by ASME approved material suppliers.	Materials designated as ASME on UFSAR Appendix E drawings are obtained by TN approved suppliers with Certified Material Test Reports (CMTR's). Material is certified to meet all ASME Code criteria but is not eligible for Certification or Code Stamping, if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NC-2130 is not possible.
NC-4120	Material Certification by Certificate Holder	Material traceability & certification are maintained in accordance with TN's NRC approved QA program.
NC-4240	Full penetration welds are required for pressure boundary closure joints.	The joint between the ram access penetration forging and the bottom end plate consists of partial penetration welds, while NC-3200 would require full penetration welds. This cover plate is a water tight closure used during fuel LOADING/UNLOADING OPERATIONS in the fuel/reactor building only. This is not a pressure boundary component, and its failure does not result in any public safety concerns.
NC-5250	Category A and B joints shall be fully radiographed.	UFSAR Appendix E drawing NUH-03-8001 permits weld examination of (a) the circumferential and longitudinal welds for the structural shell and (b) the weld between the bottom end plate and the bottom support ring to be done using radiography (RT) or ultrasound (UT) while NC-5250 allows full penetration welds to be examined by RT only. Since the structural shell is not a pressure boundary, this code exception is acceptable.
NC-6000	All completed pressure retaining systems shall be pressure tested.	With respect to pressure testing requirements, the TC is considered a non-pressure retaining component. Therefore, no pressure testing is required. However, the liquid neutron shield cavity, cask bottom neutron shield cavity, and the bottom cover plate assembly are pressure and leak tested.

Table C-17
ASME Code Alternatives for the Standardized NUHOMS® System TCs
Except for the OS200 and OS200FC TCs

(Applies to TC structural components only; lead shielding, neutron shielding, and neutron shield jacket of the TC are not addressed by this table)

Reference ASME Code Section/Article	Code Requirement	Exception, Justification and Compensatory Measures
NC-7000	Overpressure Protection	The TC is considered a non-pressure retaining component. Therefore, no overpressure protection is provided for the TC, except that a pressure relief valve is provided for the annular neutron shielding.
NC-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The TC nameplate provides the information required by 10 CFR Part 72. Code stamping is not required for the TC. QA Data packages are prepared in accordance with the requirements of 10 CFR Part 72 and TN's NRC approved QA program.
NC-5520	NDE personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.

Table C-18
ASME Code Alternatives for the Standardized NUHOMS® System OS200 and OS200FC TCs

(Applies to TC structural components only; lead shielding, neutron shielding, and neutron shield jacket of the TC are not addressed by this table.)

Reference ASME Code Section/Article	Code Requirement	Alternatives, Exception, Justification & Compensatory Measures
NCA	All	Not compliant with NCA. Quality Assurance is provided according to 10 CFR Part 72 Subpart G in lieu of NCA-4000.
NCA-1140	Use of Code editions and addenda	Code edition and addenda other than those specified in CoC Section II.1.c may be used for construction, but in no case earlier than 3 years before that specified in the CoC Section II.1.c table. Materials produced and certified in accordance with ASME Section II material specification from Code Editions and Addenda other than those specified in CoC Section II.1.c may be used, so long as the materials meet all the requirements of Article 2000 of the applicable Subsection of the Section III Edition and Addenda used for construction.
NC-1100	Requirements for Code Stamping of Components	The OS200/OS200FC TC is designed and fabricated to the requirements of Subsection NC, to the maximum extent practical. However, the TC does not have a Code stamp. Code Stamping is not required by 10 CFR Part 72 regulation. Therefore, the fabricator is not required to be ASME Certified.
NC-2000	ASME Code Materials are to be used.	The TC bottom ram access cover plate is made of ASTM A240, a non-ASME material. This cover plate is a water tight closure used during fuel LOADING/UNLOADING OPERATIONS in the fuel/reactor building only. This is not a pressure boundary component, and its failure does not result in any public safety concerns.
NC-2130	Material must be supplied by ASME approved material suppliers.	Materials designated as ASME on the UFSAR Chapter U.1 drawings are obtained by TN approved suppliers with Certified Material Test Reports (CMTR’s). Material is certified to meet all ASME Code criteria but is not eligible for Certification or Code Stamping, if a non-ASME fabricator is used. As the fabricator is not required to be ASME certified, material certification to NC-2130 is not possible.
NC-4120	Material Certification by Certificate Holder	Material traceability & certification are maintained in accordance with TN’s NRC approved QA program.
NC-5254	Category D joints shall be RT or UT examined.	The trunnion-to-shell weld is a Category D joint which does not allow adequate UT or RT examination. This weld is not a pressure boundary but serves as lifting point for the TC. During fabrication, this weld is progressive PT examined and then load- tested to three times the design load. The weld between the ram access penetration forging and bottom end plate is a Category D joint which does not allow meaningful RT or UT examination. This weld is PT examined root and final layers. This is not a pressure boundary component and its failure does not result in any public safety concerns.
NC-6000	All completed pressure retaining systems shall be pressure tested.	With respect to pressure testing requirements, the TC is not a pressure retaining component. Therefore, no pressure testing is required. However, the liquid neutron shield cavity, cask bottom neutron shield cavity, and the bottom cover plate assembly are pressure and leak tested.
NC-7000	Overpressure Protection	The TC is not a pressure retaining component. Therefore, no overpressure protection is provided for the TC, except that a pressure relief valve is provided for the annular neutron shielding.

Table C-18
ASME Code Alternatives for the Standardized NUHOMS® System OS200 and OS200FC TCs

(Applies to TC structural components only; lead shielding, neutron shielding, and neutron shield jacket of the TC are not addressed by this table.)

Reference ASME Code Section/Article	Code Requirement	Alternatives, Exception, Justification & Compensatory Measures
NC-8000	Requirements for nameplates, stamping & reports per NCA-8000.	The TC nameplate provides the information required by 10 CFR Part 72. Code stamping is not required for the TC. QA data packages are prepared in accordance with the requirements of 10 CFR Part 72 and TN's NRC approved QA program.
NC-5520	NDE personnel must be qualified to a specific edition of SNT-TC-1A.	Permit use of the Recommended Practice SNT-TC-1A to include up to the most recent 2011 edition.