ENCLOSURE 2

to VPN-044-2001

Trojan ISFSI

LCA 72-02

Safety Analysis Report (SAR)

Proposed Revision 2

Attachment A – Changes to the Trojan ISFSI Safety Analysis Report (SAR)

Attachment B – Annotated Pages of the Trojan ISFSI Safety Analysis Report (SAR)

Description of and Reason for Changes to
PGE-1069, Trojan ISFSI Safety Analysis Report (SAR)

The following table provides a section-by-section description of revisions made to the Trojan ISFSI SAR to reflect the impacts of selecting a new ISFSI vendor - Holtec International - to complete the Trojan dry spent nuclear fuel storage system.

CHAPTER 1

Section(s) Affected	Description of and Reason for Change(s)
1.1	References to "PWR Basket" are changed to "Holtec International Multi-Purpose Canister (MPC-24E or MPC-24EF)" or "MPC" to reflect updates in component and system design, terminology, and vendor names. Similarly, reference to "Shipping Cask" is changed to "Transport Cask" to be consistent with terminology of the new ISFSI vendor. For consistent usage throughout the ISFSI SAR, the first reference to "Safety Analysis Report" is defined with the acronym "SAR," and this acronym is used in later references.
1.2	The summary description of the Trojan ISFSI is revised to reflect the use of Holtec International's MCP-24E and MPC-24EF stainless steel canisters, rather than BNFL Fuel Solution's PWR Basket, in combination with the BNFL Fuel Solutions TranStor™ Concrete Casks. The resultant system is given the name "Trojan Storage System." An editorial change in the second paragraph replaces "which" with "that" to improve sentence structure. In the third paragraph, "fuel assembly inserts" is added to the list of items that the Trojan Storage System is designed to safely store. This addition clarifies that fuel assembly non-fuel bearing components may be loaded in the MPC. Another clarifying change is made to eliminate discussion of the maximum number (36) of Trojan Storage Systems that the Trojan ISFSI is designed to support, and to replace it with discussion of the actual number (34) of storage systems that it will be supporting to store the TNP spent nuclear fuel. References to "shipping cask" and licensing of the "TranStor™ Shipping Cask" in the fourth paragraph are changed to reflect the intended use of Holtec International's generally certified "HI-STAR 100 System Transport Cask (CoC 71-9261)."

CHAPTER 1

Section(s) Affected	Description of and Reason for Change(s)
1.3	References to "PWR Basket" are changed to "MPC" as described previously. "Fuel assembly inserts" is added to the list of items that the Trojan Storage System is designed to safely store, as described previously.
1.3.1	The title of this section is changed from "Storage System Baskets" to "Storage System Canisters" to reflect the aforementioned change in component design and terminology from "PWR Basket" to "MPC." Similarly, references to "PWR Basket" are changed to "MPC." A summary description of the design of Holtec's MPC is added to replace the previous description of the PWR Basket design. One of the more significant changes resulting from the change in design is that the discussion with regard to reliance "only on geometry" for maintaining subcriticality is changed to state that geometry is relied upon, and Boral neutron poison plates affixed to the fuel cell walls are also credited in the analysis. This and other changes inherent in the move from use of the PWR Basket to the Holtec-designed MPC are discussed in more detail in later chapters. "Fuel assembly inserts" is added to the list of items that the Trojan Storage System is designed to safely store, as described previously. In the bulleted list of Failed Fuel Can contents, the third item is revised editorially to be consistent with the Trojan ISFSI Technical Specification 1.1 definition of fuel debris. In the third paragraph, verb tenses have been changed to reflect the completion of fuel debris processing. Reference to the PWR Basket Overpack in the last paragraph has been eliminated to reflect the use of Holtec's MPC in lieu of the PWR Basket. The design of the MPC is such that an overpack is not required.
1.3.2	References to "PWR Basket" are changed to "MPC" as described previously.
1.3.3.1	References to "PWR Basket" are changed to "MPC" as described previously. References to "shipping cask" are changed to reflect the use of Holtec International's "HI-STAR 100 Transport Cask," as described previously. To reflect the Holtec MPC design, reference to the need for a "Basket Overpack" is removed. To reflect the Holtec-designed Transfer Cask, "Transfer Cask doors" is changed to "Transfer Cask bottom doors," and "door locking bolts" is changed to "mechanical stops."

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Section(s) Affected	Description of and Reason for Change(s)
1.3.3.2	References to "PWR Basket" are changed to "MPC" as described previously. Several conforming and/or editorial changes are made to this section. The phrase "...vertical support which prevents..." is changed editorially for grammatical correctness to instead read "...vertical support that prevents...." Reference to "Shipping Cask" is changed to "Transport Cask" as described previously. To reflect the Holtec MPC design, reference to the "Basket Overpack" is removed. The last sentence specifying a "single" vertical lift for MPC transfers at the Transfer Station is revised editorially to eliminate "single," since this descriptor is unnecessary detail and is unduly subject to varying interpretation.
1.3.3.3	This section is re-titled from "Auxiliary Systems" to "Air Pad System." This change reflects the fact that Section 1.3.4 addresses auxiliary equipment, and that this section addresses the use of air pads to facilitate movement of the Concrete Cask. Two clarifying editorial changes are made to the contents of this section. The term "cask" in the second sentence is changed to "Concrete Cask." Similarly, wording is changed to clarify that "one or more" air compressors can be used to pressurize the air pad system.
1.3.4.1	The title of this section is changed from "Vacuum Drying System" to "Moisture Removal and Helium Backfill Systems." This change and related changes to the content of this section reflect an added option for achieving required MPC cavity dryness – the helium recirculation method, and to reflect the fact that helium backfill will be performed as required by separate components referred to as the helium backfill system. The description of the vacuum drying system as "skid-mounted" is eliminated to reflect the Holtec-designed vacuum drying system. Another conforming change reflecting the Holtec vacuum drying method is the elimination of the words "in a stepwise fashion." The Holtec method involves a continuous (as opposed to a stepwise) pumpdown to achieve a vacuum pressure. This change does not impact the end result, which is a vacuum pressure that ensures that adequate MPC cavity dryness is achieved. References to "PWR Basket" are changed to "MPC" as described previously.

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Section(s) Affected	Description of and Reason for Change(s)
1.3.4.2	References to "PWR Basket" are changed to "MPC" as described previously. The description of the gap flushing system as "skid-mounted" is eliminated to eliminate unnecessary detail with regards to the design of the gap flushing system. Reference to a "mixed resin bed" is changed to clarify that the gap flushing system uses a demineralizer that uses resin to remove radioactive contaminants. The purpose of the gap flushing system as described in the last sentence is reworded to more accurately reflect its primary purpose, which is to minimize contamination of the MPC exterior while it is in the Cask Loading Pit.
1.3.4.3	Reference to "PWR Basket" is changed to "MPC" as described previously. For consistency of terminology, "semi-automatic" welding system is changed to "automated" welding system in both the section title and contents.
1.4	This section is revised to summarize the design and fabrication responsibilities of both Holtec International and BNFL Fuel Solutions for various portions of the Trojan Storage System.
1.5	Reference to "PWR Basket" is changed to "MPC" as described previously. Similar changes are made to this section to reflect the use of Holtec International (rather than BNFL Fuel Solutions) as the provider of the MPC, Transfer Cask, and Transport Cask.
Figure 1.1-2	This figure is revised to reflect the change in the Trojan ISFSI Controlled Area Boundary from 325 meters to 225 meters from the edge of the ISFSI Storage Pad to reflect new dose calculations based on the Holtec MPC design and actual Trojan spent nuclear fuel characteristics and loading configurations. This change is analyzed to ensure that the dose requirements of 10 CFR 72.104, 10 CFR 72.106, and Oregon Administrative Rule (OAR) 0345-26-0390(4)(f) are satisfied.
Figure 1.3-1	This figure is revised to reflect the replacement of BNFL Fuel Solutions' PWR Basket portion of the Trojan Storage System with Holtec International's MPC.

CHAPTER 2

Section(s) Affected	Description of and Reason for Change(s)
2.1.1	A reference to the nearby community of "Longview" is changed to "Longview-Kelso," which is the name by which the community consisting of these two geographically integrated cities are commonly referred in the local area. This change introduces Kelso as a community close to the site, and enhances readability of Chapter 2 as Kelso is discussed in later sections of this chapter.
2.1.2	An editorial change is made to clarify a reference to the "access Controlled Area" as the area that defines the Trojan ISFSI "site" within which 10 CFR 72 activities are licensed and will occur. The clarification changes this reference to "controlled access area" and its boundary, specifically to distinguish it from the "Controlled Area Boundary" that is established pursuant to 10 CFR 72.3, 10 CFR 72.104 and 10 CFR 72.106 for satisfying radiological dose requirements. To enhance grammar and sentence structure, "which" is replaced with "that" in the fifth paragraph. In the next-to-last paragraph, the boundary of the "Controlled Area" as defined in 10 CFR 72.106 is changed from "...325 meters from the edge of the Storage Pad..." to "225 meters from the edge of the Storage Pad..." to reflect new dose calculations based on the Holtec MPC design and actual Trojan spent nuclear fuel characteristics and loading configurations.
2.1.2.1	References to the "ISFSI access Controlled Area" are changed to "controlled access area" to distinguish it from the "Controlled Area" as described previously.
2.1.2.2	The first paragraph is revised to include a summary of the Holtec HI-STORM FSAR analyses results that form the basis for concluding that a mechanistic failure of the MPC confinement boundary is not credible. References to the "ISFSI access Controlled Area" are changed to "controlled access area" to distinguish it from the "Controlled Area" as described previously. A reference to the "restricted area" in the second sentence of the second paragraph is capitalized for consistency. In the third paragraph, the minimum distance from the Concrete Casks to the Restricted Area is changed from 40 feet to 50 feet, which more accurately represents the minimum distance that is used as an assumption in the Trojan ISFSI shielding analysis described in Trojan ISFSI SAR Section 7.3.2.
2.2.1	Reference to the "James River Corporation" is changed to the "Georgia-Pacific Corporation" to reflect a change in ownership and/or ownership name.

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Section(s) Affected	Description of and Reason for Change(s)
2.2.2	Reference to the operator of the aluminum plant in Longview is changed from "Reynolds Metal Company" to "Longview Aluminum" to reflect a change in ownership and/or ownership name. For grammatical correctness, "...use of chemicals...correspond to..." becomes "...use of chemicals...corresponds to...."
2.2.3.1	A comma is added to the third sentence of the second paragraph to enhance sentence structure and readability. A statement of the MPC's design capability to withstand a 60 psig external pressure is added to emphasize the Trojan Storage System's capability to withstand the maximum generated overpressure resulting from an explosion event. The sentence before this is also revised to reflect an update of the Section 8.2.8.2 explosion analysis for the Trojan Storage System incorporating the Holtec MPC. As described below for Section 8.2.8.2, the calculation of the pressure required to slide and uplift a Concrete Cask is revised to account for the slightly increased weight and mass, and associated change in the center of mass, of a Concrete Cask with loaded MPC as compared to a Concrete Cask with loaded PWR Basket. The effect of these design changes results in a small change in the wind pressure that the Concrete Cask is able to withstand without sliding or overturning, from 5.8 psi to 5.87 psi. Calculation and analysis details are provided in Section 8.2.8.2.
2.2.3.3	References to "PWR Basket" are changed to "MPC" to reflect updates in component and system terminology. The "Rainier Rural Fire Protection District" in the sixth paragraph is changed to the "St. Helens Rural Fire Protection District" to reflect the recent absorption of the Rainier Rural Fire Protection District by the St. Helens Rural Fire Protection District.
2.2.3.4	A reference to the "Longview-Kelso" airport is corrected to read "Kelso-Longview" airport, consistent with other references to this airport.
2.3.3	Reflecting a grammatical correction, "...data was collected..." is changed to "...data were collected...."

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Section(s) Affected	Description of and Reason for Change(s)
2.3.4	The long-term and hypothetical accident diffusion estimates are revised for a distance of 150 meters. The last sentence of both of the paragraphs in this section is revised to explain why assessment of the diffusion estimates at 150 meters is conservative with respect to the reduced Controlled Area boundary (from 325 meters to 225 meters) as described previously. These revised values are used in the analyses of hypothetical MPC leakage scenarios provided in Section 8.1.4 and Section 8.2.1.
2.4.1.1	A comma is added to the first sentence of the last paragraph to enhance readability.
2.4.4.1	This section is clarified with rewording and additional information to minimize the opportunity for misinterpretation with regards to maximum water surface elevations as a result of the maximum artificial flood - a catastrophic failure of the Grand Coulee Dam. This change has been reviewed pursuant to 10 CFR 50.59 and 10 CFR 72.48 and determined not to require prior NRC approval, and is provided herein since it will be incorporated into this ISFSI SAR revision.
2.5.1	Editorial changes to this section include changing "fine grained" to "fine-grained" in the first sentence of the third paragraph, and replacing "which" with "that" in the third sentence of the fourth paragraph and the fourth sentence of the last paragraph.
2.6.3	"Which" is replaced with "that" in the first sentence of the fourth paragraph to enhance sentence structure and readability.
2.6.4	Verb tenses are revised in the first sentence to reflect the fact that construction of the Trojan ISFSI concrete Storage Pad is complete.
2.6.4.1	An editorial correction is made to a typographical error in the fourth paragraph, replacing "begin" with "being."
2.8	Reference 14 is added to "References for Section 2.1" and "References for Section 2.2" to incorporate the Holtec Final Safety Analysis Report for the HI-STORM 100 System into the Trojan ISFSI SAR. This change reflects the change from using BNFL Fuel Solutions' PWR Basket to instead using Holtec's MPC.
Table 2.2-1	Reference to the operator of the aluminum plant in Longview is changed from "Reynolds Metal Company" to "Longview Aluminum" as discussed previously. The company corresponding to Map Reference No. 15 is changed from "Chevron Chemical Company" to "Coastal St. Helens Chemical Company" to reflect a change in ownership and/or ownership name. The company corresponding to Map Reference No. 20 is changed from "BHP Steel" to "Steelscape" to reflect a change in ownership and/or ownership name.

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Section(s) Affected	Description of and Reason for Change(s)
Table 2.7-1	As described above for Section 2.3.4, the atmospheric dilution factors that are applied to calculate the consequences of postulated releases are changed to correspond to a distance of 150 meters. Since the dilution factor values in this table were not for 150 meters, and since this parameter is not consistent with the other table entries as parameters of "site conditions," the atmosphere dilution factor is deleted from the table. Sections 2.3.4, 8.1.4, and 8.2.1 provide the values for the applicable atmospheric dilution factors.
Figure 2.1-2	This figure is revised to reflect the reduction in the Controlled Area boundary from 325 to 225 meters from the edge of the ISFSI Storage Pad.

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Section(s) Affected	Description of and Reason for Change(s)
3.1	Since the acronym "ISFSI" is defined in Section 1.1 of the ISFSI SAR, the unnecessary definition of this term is eliminated and replaced with the acronym. Reference to "failed" spent nuclear fuel assemblies is changed to "damaged" spent nuclear fuel assemblies to be consistent with the terminology defined in the Trojan ISFSI Technical Specifications, Section 1.1, for such fuel assemblies. Reference to "PWR Basket" is changed to "MPC" to reflect updates in component and system terminology.
3.1.1.1	Several editorial changes are made to clarify and/or enhance readability. In the first paragraph, commas are added, and the acronyms "RCCA" and "BPRA" are changed from singular form to plural, since the items to which they refer are plural in the context of the sentence. In the second paragraph, the word "respectively" is added to the last sentence to clarify that limiting radiological characteristics of the Trojan spent nuclear fuel are shown in Table 3.1-2, and the limiting thermal characteristics are shown in Table 3.1-3. Reference to "PWR Basket" is changed to "MPC" as described previously.
3.1.1.2	In both the title and contents of this section, references to "failed" fuel are changed to "damaged" fuel as described previously.
3.1.1.3	This section is revised to remove a limit on the quantity of fuel debris that was allowed in each PWR Basket. This limit was based on an assumption used in the criticality analysis for the PWR Basket, and on the TranStor™ shipping cask license conditions. Since the Holtec MPC and HI-STAR 100 Transport Cask will be used at the Trojan ISFSI in lieu of the PWR Basket and TranStor™ shipping cask respectively, and since the criticality analysis performed for the loaded MPC does not contain this limiting assumption, this limit no longer applies. The last sentence, a restatement of a regulatory limitation on fuel debris composition, is also eliminated. Elimination of this sentence represents an administrative/editorial change made to remove unnecessary and "out-of-context" information, since it obviously does not impact the applicability of this and/or any other regulatory requirement that applies to the Trojan Storage System. The remaining sentence in this section is revised to clarify "fuel assembly fragments" to include "bottom nozzles" and to be more consistent with the Trojan ISFSI Technical Specification 1.1 definition of fuel debris. This sentence is also revised to clarify that fuel debris may also include "those fuel assemblies classified as fuel debris."

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3.1.1.4	This section was issued as a deleted section in Revision 0 of the ISFSI SAR because prior to issuance of the approved ISFSI SAR, it was determined that waste classified as "greater than Class C" would not be stored in the Trojan ISFSI. Since there is no need to preserve the section numbering here, this "placeholder" section is eliminated to enhance readability.
3.1.2	A statement is added to clarify that, although the Trojan ISFSI is designed for 36 Concrete Casks, only 34 Concrete Casks are required to store Trojan spent nuclear fuel and fuel-related hardware. References to "PWR Basket" are changed to "MPC" as described previously. In the fourth paragraph, a reference to "Shipping Cask" is changed to "HI-STAR 100 Transport Cask" as described previously. Reference to the PWR Basket Overpack has been eliminated to reflect the use of Holtec's MPC in lieu of the PWR Basket. As described further in Section 3.3.2, the design of the MPC is such that an overpack is not required. An editorial change to the first sentence of this paragraph clarifies that air vent inspections and air outlet temperature monitoring are performed "on scheduled intervals."
3.2.1.3	References to "PWR Basket" are changed to "MPC," and reference to the PWR Basket Overpack is removed as described previously.
3.2.1.4	Reference to "PWR Basket" is changed to "MPC" as described previously. A typographical error is corrected in the first sentence of the second paragraph. Specifically, "Concrete Cask" is changed to "Transfer Cask."
3.2.2	A punctuation correction in the first sentence replaces a comma with a semi-colon.
3.2.3.1.3	A punctuation correction replaces a comma with a semi-colon.
3.2.3.1.7	For consistency throughout the SAR, an editorial change is made to spell out "inches."
3.2.3.2.1, 3.2.3.2.5	For consistency throughout the SAR, "%" is replaced with "percent."
3.2.3.2.8	Reference to "PWR Basket" is changed to "MPC" as described previously.
3.2.5	References to "PWR Basket" are changed to "MPC" as described previously. Reference to "shipping cask" is changed to reflect the use of Holtec International's HI-STAR 100 Transport Cask.

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Section(s) Affected	Description of and Reason for Change(s)
	The description of accident loads is revised to reflect a change in the postulated accident scenario involving a complete blockage of Concrete Cask air flow. As described below for Sections 8.2.7.1 and 8.2.7.2, as well as in Section 8.2.7 itself, this scenario is now analyzed for a complete blockage of all air inlets, as opposed to blockage of all air inlets and outlets. This is consistent with the assumptions that Holtec used in their generic analysis of this postulated scenario, as incorporated into Section 11.2.13 of the HI-STORM 100 FSAR.
3.2.5.1	For consistency and accuracy, a reference to "ACI 349" is changed to "ACI-349."
3.2.5.2	References to "PWR Basket" are changed to "MPC," and references to the PWR Basket Overpack are removed as described previously. ASME design references are also changed to reflect differences in code conformance between the MPC design and that of the PWR Basket. To conform with Holtec terminology associated with the MPC, "PWR Basket internals" is replace with "MPC fuel basket." The specification of Rod Cluster Control Assembly (RCCA) weight in parentheses in the last paragraph is replaced with a sentence that states that "physical parameters of RCCAs and other fuel assembly inserts are summarized in Table 3.1-4." This table specifies a number of RCCA physical parameters, including weight.
3.2.5.3	The ASME design references to which the Holtec Transfer Cask design conforms have been added to this section. This change reflects the differences associated with the design of Holtec's Transfer Cask that will be used for movement of the MPC, as opposed to the design of the BNFL Fuel Solutions Transfer Cask that was designed for movement of the PWR Basket. In addition, the specific design criteria for the Transfer Cask have been removed to eliminate redundancy with Table 3.6-2, which summarizes the Transfer Cask design criteria and is referenced in this section.
3.2.5.4	References to "PWR Basket" are changed to "MPC" as described previously. In the second sentence, reference to "vacuum drying" is changed to "moisture removal" to reflect the addition of the helium recirculation method as an option for achieving required MPC cavity dryness. In the same sentence, "MPC closure" is changed to "MPC closure operations" for clarification and consistency of terminology.
3.3.1	References to "PWR Basket" are changed to "MPC" as described previously. Other conforming changes are made to reflect use of the MPC, including replacing "internals" with "fuel basket."

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Section(s) Affected	Description of and Reason for Change(s)
	Item 1 of the list of primary functions of the MPC has been revised to clarify the function of the MPC as a confinement system as defined in 10 CFR 72.3. The list of the primary functions of the PWR Basket Overpack has been removed since the overpack is no longer applicable to the Trojan ISFSI. Item 1 of the list of primary functions of the Transfer Cask has been revised to reflect the differences associated with the design of Holtec's Transfer Cask that will be used for movement of the MPC, as opposed to the design of the BNFL Fuel Solutions Transfer Cask that was designed for movement of the PWR Basket. As described below for Section 9.2.3.1.2, under the Holtec generically approved HI-TRAC Transfer Cask and associated Transfer Cask Lifting Yoke designs, upon which the Trojan ISFSI Transfer Cask and Transfer Cask Lifting Yoke designs are based, the Transfer Cask Lifting Yoke and Transfer Cask trunnions are classified as and designed to the requirements for special lifting devices, but the remainder of the Transfer Cask is not considered a special lifting device. See the discussion below for Section 9.2.3.1.2 for additional details. In the next-to-last paragraph, references to "failed fuel" are changed to "damaged fuel" as described previously. The description of the primary function of the Process Can Capsule is changed, and a sentence is added, to clarify that the Process Can Capsule provides a "confinement boundary," and the Failed Fuel Can provides a "containment boundary" for the Process Can Capsules and for fuel assemblies classified as fuel debris. Finally, editorial changes include providing initial capitalization for the "Fuel Debris Processing Project" for consistency of terminology, and replacing a reference to "failed fuel" with "damaged fuel" as described previously.
3.3.2.1	References to "PWR Basket" are changed to "MPC" as described previously. Associated changes are made to reflect differences in the designs of the MPC, including the MPC fuel basket and MPC lid, as compared to the designs of the PWR Basket, internals, and shield and structural lids. Since leakage of an MPC is not considered credible, discussion of confinement boundary leakage and use of an overpack in the next-to-last paragraph is replaced with a summary of the basis for the determination that MPC leakage is not credible. The last paragraph is revised to clarify that the design of the MPC is such that during a postulated drop accident, the fuel basket stresses will not exceed the

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Section(s) Affected	Description of and Reason for Change(s)
	applicable code stress limits. The verb tense in the last sentence is revised for readability to state "...is also designed..." instead of "...must also be designed...."
3.3.2.2	References to "PWR Basket" are changed to "MPC" as described previously. Associated changes are made to reflect differences in the MPC lid and lid closure designs as compared to the PWR Basket shield and structural lids and lid closure designs. Similarly, changes are made to reflect differences in design, implementation, and verification of the MPC closure welds as compared to the PWR Basket closure welds.
3.3.2.3	Discussion of a leaking PWR Basket and contingency use of the PWR Basket Overpack is eliminated since the MPC is now used in the Trojan Storage System instead of the PWR Basket, and since the design of the MPC is such that an overpack is not required.
3.3.3.1	References to "PWR Basket" are changed to "MPC," and references to the PWR Basket Overpack are removed as described previously. A related change is made to reflect differences in the design and terminology associated with MPC lifting components as compared to the PWR Basket. Specifically, "MPC Lift Cleats" replaces "Basket Hoist Rings" in the list of equipment/components classified as important to safety. This list is renumbered to reflect the elimination of "Basket Overpack" from the list as described previously. Finally, for consistency, capitalization has been corrected in the list entry for "Fuel Debris Process Can Capsule."
3.3.4.1	References to "PWR Basket internal(s)" are changed to "MPC fuel basket" as described previously. This section has been revised to reflect a change in an assumption used in the criticality analysis. Specifically, when the PWR Basket was the intended design, the use of Boral in the PWR Basket internals was not credited in the criticality analysis; this served as the source of an exemption from the requirements of 10 CFR 72.124(b). With the replacement of the PWR Basket with the Holtec MPC, the Boral used in the MPC fuel basket is now credited in a new criticality analysis such that the exemption from 10 CFR 72.124(b) is no longer necessary. As a result, new words are added at the end of the second paragraph to describe how the requirements of 10 CFR 72.124(b) are satisfied.

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	Several changes are made to the last paragraph to clarify that fuel debris Process Cans with contents that did not require processing, as well as fuel assemblies classified as fuel debris or damaged fuel, are placed directly into Failed Fuel Cans. The verb tense in the third sentence is changed to clarify that fuel debris processing has been completed, and that the Process Can Capsules "are" placed in Failed Fuel Cans. The last sentence stating that administrative controls limit the amount of fuel debris that can be placed within the basket is eliminated. The updated criticality evaluations do not require administrative controls on the amount of fuel debris in the MPC.
3.3.4.2	This section is revised to reflect the fact that optimization of fuel assembly position within the fuel basket cells no longer is included in the criticality analysis for the MPC (as it was in the criticality analysis for the PWR Basket). The basis is provided in the revised wording.
3.3.4.3	Reference is added specifying the code approved by the NRC for the MPC criticality analysis, as well as controls governing code validation. This information replaces similar information that had been applicable to the PWR Basket.
3.3.5.1	References to "PWR Basket" are changed to "MPC" as described previously.
3.3.5.2	The value for average dose (gamma and neutron) at the top and air vents of the loaded Concrete Cask is changed from 250 mrem/hr to 300 mrem/hr to reflect the design of the MPC as compared to that of the PWR Basket. As shown in Trojan ISFSI SAR Chapter 7, this change does not adversely impact the ability to satisfy the dose requirements of 10 CFR 72.104 and 10 CFR 72.106 for the Trojan ISFSI. Editorial changes are also made to clarify that the values given for Concrete Cask average dose rates at the top and sides are not design basis values, but rather result from the Trojan Storage System design features that specifically are incorporated to conform with the dose rate limits at the Controlled Area boundary pursuant to 10 CFR 72.104, 10 CFR 72.106, and 10 CFR 20.
3.3.5.3	Reference to "PWR Basket" is changed to "MPC" as described previously.
	After considering the design differences between the MPC and the PWR Basket, the consequences of an inadvertent release of surface contamination from the exterior of the MPC changed from 2.4 mrem to 2.50 mrem (at 100 meters). Similarly, the estimated working dose rate for the Concrete Cask is changed from 10.2 mrem/hr to 6.5 mrem/hr, and the highest dose rate at 100 meters from the edge of the ISFSI Storage Pad is changed from 0.023 mrem/hr to 0.077 mrem/hr. As shown in Trojan ISFSI SAR Chapter 7, these changes do not adversely impact the ability to satisfy

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	the dose requirements of 10 CFR 72.104 and 10 CFR 72.106 for the Trojan ISFSI. Furthermore, these changes do not impact the conclusion reached in this section, that radiological alarms are not required to protect Trojan ISFSI personnel or the environment.
3.3.7.1	Reference to "PWR Basket" is changed to "MPC" as described previously. Similarly, discussion of the use of a PWR Basket Overpack has been eliminated to reflect the use of Holtec's MPC in lieu of the PWR Basket. The design of the MPC is such that an overpack is not required. The design basis decay heat load limits for each MPC and for each individual fuel assembly, as well as fuel clad temperature limits, have been removed from the text since they are provided in Table 3.1-3, and this table is referenced in the text. Furthermore, the design maximum decay heat load for the MPC is now based on the MPC loaded with 24 fuel assemblies, each assembly equivalent to the most limiting Trojan-specific fuel assembly based on a combination of cooling time and burnup. This results in a design basis maximum decay heat load of 17.4 kWt, which is conservative since only one spent nuclear fuel assembly at Trojan is most limiting, and the other 23 fuel assemblies in the MPC containing the most limiting fuel assembly will have combinations of cooling time and burnup that are not as limiting. An editorial change is made for readability to the fourth paragraph to insert an "a" between "maintaining" and "subcritical condition." Editorial clarification is added in the last paragraph to emphasize that the Trojan ISFSI, including the Trojan Storage System components, are designed for a minimum of 40 years.
3.5	References to "PWR Basket" are changed to "MPC" as described previously. Reference to "Shipping Cask" is changed to "Transport Cask" as described previously.
3.6	Reference to "PWR Basket" is changed to "MPC," and reference to the PWR Basket Overpack is removed as described previously.
3.7	References 1 and 3 are revised to reflect the impacts of selecting Holtec International to complete the Trojan dry spent nuclear fuel storage system.

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Table 3.1-2	The revisions to this table reflect an update to the bounding Trojan spent fuel radiological characteristics, which includes a new design basis combination of spent fuel burnup, cooling time, and enrichment that conservatively bounds the Trojan spent fuel inventory. Thus, the design maximum radiological characteristics provided in this table are revised to provide a single "most limiting" case, replacing the 5- and 6-year cooling cases with a single 9-year cooling case to bound the Trojan fuel. This change reflects the additional time that the spent nuclear fuel will have cooled by the time fuel loading into the ISFSI begins. This updated bounding source term is used in the shielding analysis presented in Section 7.3.2, and in the confinement analyses presented in Sections 7.6, 8.1.4, and 8.2.1.
Table 3.1-3	The design maximum thermal characteristics provided in this table are revised to provide a "most limiting" case as described above for Section 3.3.7.1. The design decay heat load for the MPC is now based on the MPC loaded with 24 fuel assemblies, each assembly equivalent to the most limiting Trojan-specific fuel assembly based on a combination of cooling time – 9 years – and burnup – 39,345 MWD/MTU. The long-term fuel cladding temperature limit is recalculated as shown.
Table 3.2-4	This table is updated to reflect the load combinations applicable to the MPC, and the previous information for a PWR Basket and Basket Overpack is removed. The MPC load combinations for seismic, flood, and tornado loads are removed from this table to be consistent with Table 2.2.14 of the Holtec HI-STORM FSAR. The MPC would be subject to earthquake, flood, and tornado loads only when it is stored inside the Concrete Cask, and thus these loads are considered with respect to the Concrete Cask. Design load combinations for the Concrete Cask are presented in Table 3.2-3. (Note: From flooding analyses presented in the TNP DSAR and the fact that the Trojan ISFSI Storage Pad surface is above the credible flood plane, it has been determined that a flood that could adversely impact the Trojan ISFSI is not considered credible.)
Table 3.2-5	Table is updated to reflect the structural design criteria applicable to the MPC, and the previous information for a PWR Basket and Basket Overpack is removed.
Table 3.6-1	Editorial changes are made to correct a typographical error when referencing NUREG 0800, and to reflect the change from a "PWR Basket" to an "MPC."
Table 3.6-2	This table is updated to reflect the structural design criteria applicable to the Holtec-designed Transfer Cask that will be used for the Trojan ISFSI. The previous information for the Transfer Cask designed by BNFL Fuel Solutions is removed.

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4.0	Consistent with a similar change to Chapter 11, the Holtec International Quality Assurance (QA) Program is added to this paragraph as a QA program that covers the portion of the Trojan Storage System design, analysis, and fabrication that is provided by Holtec International.
4.1.2.2	Reference to "controlled area" has been capitalized for consistency with other SAR references.
4.2	To enhance readability, an editorial change is made to the second sentence, eliminating the inappropriate use of a comma after the first word of the sentence.
4.2.1	References to "PWR Basket" are changed to "MPC" to reflect updates in component and system terminology. Reference to the PWR Basket Overpack is removed as described previously. Associated changes are made to reflect the design standards that are applied to the MPC confinement boundary (ASME Section III, Subsection NB), which replace the design standards that had been applied to the PWR Basket confinement boundary (Subsection NC). The word "design" is added to the heading of the second column and to Note 1 to clarify that the cited codes/standards apply to the design. Other changes are made in this section to conform to the aforementioned design and terminology differences between the MPC and the PWR Basket. For example, "internal assembly" (applicable to the PWR Basket) is changed to "fuel basket" (applicable to the MPC), and reference to "Shipping Cask" is changed to "HI-STAR 100 Transport Cask" as described previously. Other editorial changes are made throughout the section to enhance readability and understanding, including: (1) Two grammatical corrections are made in the first paragraph (changing "is" to "are"); (2) The reference to the "Transfer" Pad in the first entry in the table embedded in the text is changed to "Transfer Station" Pad for consistency of terminology; (3) The table Note 1 is moved from the bottom of the page to immediately below the table to distinguish this table note from a section footnote; (4) In the second paragraph following the embedded table, "are not classified as important to safety" is changed to "are classified as not important to safety;" (5) Added to the last paragraph are two references to Chapter 4 tables that list code deviations for the MPC and Concrete Cask.
4.2.2.1	An editorial change is made to the last paragraph to enhance consistency. Specifically, the symbol for "inches" is spelled out.

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4.2.3	References to "PWR Basket" are changed to "MPC," and discussion related to the PWR Basket Overpack is removed, both as described previously. The first sentence of the first paragraph is revised editorial to eliminate the last word, "waste," since this word added nothing and is redundant with "spent nuclear fuel." The last sentence of the first paragraph is revised editorially to conform to elimination of PWR Basket Overpack discussion. In the second paragraph, reference to "failed fuel assemblies" is changed to "damaged fuel assemblies" to be consistent with the terminology defined in the Trojan ISFSI Technical Specifications, Section 1.1, for such fuel assemblies.
4.2.4	This section is revised to clarify that, although the Trojan ISFSI is designed for 36 Concrete Casks, only 34 Concrete Casks are required to store Trojan spent nuclear fuel and fuel-related hardware. In addition, reference to "PWR Basket" is changed to "MPC," and discussion related to the PWR Basket Overpack is removed as described previously.
4.2.4.2.1	Previously a relatively detailed description of the design, function, and operation of the PWR Basket, this section is rewritten to reflect the switch from use of the PWR Basket to the Holtec-designed MPC. The changes are self-evident in the markup, and reflect the design of the MPC, including design of the confinement boundary, fuel basket, lid, and lid closure (e.g., weld design parameters and specifications). Changes are also made to reflect differences between PWR Basket and MPC terminology and design associated with systems and components used during closure operations (e.g., cavity drying now includes the option for helium recirculation). Details of changes associated with MPC closure operations (as opposed to those associated with PWR Basket closure) are provided below for, and in, Trojan ISFSI SAR Section 5.1.1.2. The second paragraph is eliminated to reflect the fact that none of the stainless steel MPC components are coated. This paragraph had cited two purposes of the coating that had been specified for the PWR Basket exterior bottom plate and shell – to facilitate decontamination and to promote radiant heat dissipation in support of the PWR Basket thermal analysis. The MPC design, loading procedures, and the MPC thermal analysis assumptions do not require a coating. Specifically, since the loading operation will normally only require the Transfer Cask and MPC to be submerged in the Cask Loading Pit for a short period of time, and the water in the Cask Loading Pit will not contain significant quantities of loose contamination, absorption of contamination by the Transfer Cask and MPC is not expected.

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	Additionally, contamination of the external surface of the MPC and internal surface of the Transfer Cask is minimized by installation of an annulus seal in the gap between the MPC exterior and Transfer Cask interior, and then continually flushing this gap with filtered water while the Transfer Cask and MPC are submerged in the Cask Loading Pit. However, as a precaution, the outer and inner surfaces of the Transfer Cask are coated to prevent absorption of contamination by the Transfer Cask. Finally, the MPC thermal analysis does not rely on or credit coating(s) of MPC components to promote radiant heat dissipation. Similarly, the end of the new second paragraph is eliminated to reflect the fact that, unlike the PWR Basket internals constructed of carbon steel, the MPC stainless steel internal components are not coated. This paragraph had cited two purposes of the coating that had been specified for the PWR Basket internals – to provide corrosion protection and to promote radiant heat dissipation in support of the PWR Basket thermal analysis. The MPC design and thermal analysis assumptions do not require a coating. Specifically, the MPC internal components are composed of stainless steel and Boral, both of which are shown to exhibit significant corrosion resistance, even in a borated water environment. Finally, the MPC thermal analysis does not rely on or credit coating(s) of MPC internal components to promote radiant heat dissipation. The next-to-last paragraph is revised to reflect the ASME standards that are applied to the MPC confinement boundary (ASME Section III, Subsection NB), which replace the design standards that had been applied to the PWR Basket confinement boundary (Subsection NC). A reference is added to Table 4.2-1a that includes certain code deviations. In the last paragraph, a reference to Figure 4.2-1 is changed to reflect the replacement of this figure, which had provided a pictorial description of the PWR Basket, with two new figures, Figures 4.2-1a and 4.2-1b, which provide pictorial descriptions of the MPC and MPC fuel basket configuration.
4.2.4.2.2	This section was issued as a deleted section in Revision 0 of the ISFSI SAR because prior to issuance of the approved ISFSI SAR, it was determined that waste classified as "greater than Class C" would not be stored in the Trojan ISFSI. Since there is a need to preserve the section numbering here, this "placeholder" section is retained, but "This section deleted" replaces the existing section title for consistency with other deleted (placeholder) Trojan ISFSI SAR sections.

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4.2.4.2.3	This section, which contained a description of the design, function, and operation of the Basket Overpack, has been deleted since the design of the MPC does not require a contingency storage overpack. Since there is a need to preserve the section numbering here, this "placeholder" section is retained, but "This section deleted" replaces the existing section title for consistency with other deleted (placeholder) Trojan ISFSI SAR sections.
4.2.4.2.4	References to "PWR Basket" are changed to "MPC" as described previously. A reference to Table 4.2-2a ACI code deviations is added to the last paragraph to supplement the existing references to Concrete Cask design and fabrication descriptions.
4.2.4.2.5	References to "PWR Basket" are changed to "MPC" as described previously. Reference to "failed" fuel in the first paragraph is changed to "damaged" fuel as described previously. In addition, the description of fuel assembly hardware consisting of non-fuel bearing components is revised to be consistent with fuel debris terminology as defined in the Trojan ISFSI Technical Specifications, Section 1.1. Reference to "vacuum drying" in the second paragraph is changed to "moisture removal" to reflect the addition of the helium recirculation method as an option for achieving required MPC cavity dryness. A new paragraph is added to reflect the MPC design associated with the last Failed Fuel Can to be loaded. This change involves the incorporation of a stainless steel spacer to fill the void between the bottom of the Failed Fuel Can lid and the top of the uppermost Process Can in the Failed Fuel Can. Although not required to maintain subcritical conditions, this represents a conservative design enhancement to ensure that the stored contents are contained in a relatively constant region (towards the bottom) of the Failed Fuel Can.
4.2.4.2.6	Reference to "PWR Basket" is changed to "MPC" as described previously. Reference to "vacuum drying" is changed to "moisture removal" to reflect the addition of the helium recirculation method as an option for achieving required MPC cavity dryness.
4.2.4.2.7	This section was issued as a deleted section in Revision 0 of the ISFSI SAR because prior to issuance of the approved ISFSI SAR, it was determined that waste classified as "greater than Class C" would not be stored in the Trojan ISFSI. Since there is a need to preserve the section numbering here, this "placeholder" section is retained, but "This section deleted" replaces the existing section title for consistency with other deleted (placeholder) Trojan ISFSI SAR sections.

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4.2.4.2.8	This section is significantly revised to reflect that, unlike the PWR Basket, no component in the Holtec MPC is coated. The discussion of Basket Overpack coating is eliminated since the design of the MPC is such that a contingency storage overpack is not required. A description of the Transfer Cask coating and its purposes is added.
4.2.4.3	An editorial change is made to the first paragraph to clarify that the design of the Trojan Storage System is such that no releases are anticipated as a result of normal, off-normal, or accident conditions. In the second paragraph, including the list of four design features, references to "PWR Basket" are changed to "MPC" as described previously. Conforming changes are made to Items 1 and 2 of the list of design features to reflect the design of the MPC confinement boundary, including its closure components and associated welds. An editorial change to Item 4 of this list adds radiation shielding to the purposes of the Concrete Cask for completeness.
4.2.5	References to "PWR Basket" are changed to "MPC" as described previously. Associated changes are made to reflect: (1) differences in the design and applicable design standards for the MPC as compared to the design of and standards applied to the PWR Basket; (2) different terminology between PWR Basket "internal assembly" and the MPC "Fuel Basket;" and (3) that a "shield lid" is not part of the MPC design terminology.
4.2.5.3	Reference to "PWR Basket" is changed to "MPC" as described previously. The title is revised to clarify that this section presents the MPC stress analysis for normal loads.
4.2.5.3.1	References to "PWR Basket" are changed to "MPC" as described previously. Conforming changes are made to present the thermal stress analysis discussion in a manner consistent with the design of and terminology associated with the MPC. For example, PWR Basket "sleeves" in the first paragraph is changed to MPC "fuel basket," and "internal assembly cells" and "structural tubes" in the third paragraph are replaced with MPC "fuel basket honeycomb." The third paragraph incorporates changes reflecting the methodology used to analyze MPC thermal stresses, as compared to that associated with PWR Basket thermal stress analyses. The new methodology incorporates the application of a scaling factor to maximum thermal stress analysis results presented in the HI-STAR 100 FSAR. This scaling factor is the ratio of the maximum MPC thermal

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	gradient in the storage system (320°F) to the MPC thermal gradient analyzed in the HI-STAR 100 FSAR (650°F), or 0.49.
4.2.5.3.2	References to "PWR Basket" are changed to "MPC" as described previously. The methodology for the MPC dead weight load analysis differs from the previous PWR Basket analysis methodology in that for the MPC, rather than performing a calculation of drop stresses and respective accelerations, the MPC dead weight load is assumed to be 1g and is determined to be bounded by MPC handling loads.
4.2.5.3.3	References to "PWR Basket" are changed to "MPC" as described previously. Conforming changes are made to present the pressure analysis discussion in a manner consistent with the design, design standards, terminology, and calculation methodology associated with the MPC. Design basis MPC internal and external pressures under normal operating conditions are now specified. The calculation result for worst case minimum operating pressure is revised from -7.9 psig to 21.7 psig, which reflects the difference in free volume in the MPC versus the PWR Basket, and also reflects the change in the design decay heat load for the MPC from 26 kWt (upon which the PWR Basket was designed) to 17.4 kWt, as described above for Section 3.3.7.1. Details of the MPC cavity pressure calculation for the Trojan Storage System is contained in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
4.2.5.3.4	References to "PWR Basket" are changed to "MPC" as described previously. Conforming changes are made to present the handling analysis discussion in a manner consistent with the design of, and terminology and calculation methodology associated with, the MPC.
4.2.5.3.5	References to "PWR Basket" are changed to "MPC" as described previously. Conforming changes are made to present the load combination analysis discussion in a manner consistent with the design of, and terminology and calculation methodology associated with, the MPC. The resultant change in the defined normal handling deceleration is consistent with that analyzed in the FSAR for the generically-approved HI-STAR 100 System Transportation Package. In addition, the description of the calculation methodology used in the stress analysis is clarified. Finally, two sentences are added to the end of this section that clarify how handling stresses are incorporated into Table 4.2-8.
4.2.5.3.6	References to "PWR Basket" are changed to "MPC" as described previously. Conforming changes are made to present the fatigue analysis discussion in a manner

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	consistent with the design and associated applicable design standards of, and terminology and analysis methodology associated with, the MPC. The analysis methodology is summarized in the markup.
4.2.5.3.7	References to "PWR Basket" are changed to "MPC" as described previously. Conforming changes are made to present the pressure stress analysis discussion in a manner consistent with the design of, and terminology and analysis methodology associated with, the MPC. The location of maximum primary stresses, as reflected in the first paragraph, are revised to reflect the MPC design, and the presentation of the calculated values is revised accordingly. The last sentence of this section is deleted since the ASME code requirements applied to the MPC confinement boundary are not the same as those applied to the PWR Basket, and the applicable MPC code requirements and exception are stated in the revised first sentence of this section. A sentence is added to the end of this section to explain that the ASME Service Level A limits presented in this section differ from the corresponding Table 4.2-8 values as a result of different analysis temperatures.
4.2.5.3.8	References to "PWR Basket" are changed to "MPC" as described previously. Conforming changes are made to present the fracture toughness discussion in a manner consistent with the design and associated applicable design standards of, and terminology and analysis methodology associated with, the MPC. The ASME code specification in the first sentence is revised to that applied to the MPC (as opposed to what had been applied to the PWR Basket). The second paragraph is revised to reflect (1) differences in MPC and PWR Basket terminology (e.g., MPC fuel basket versus PWR Basket internal); and (2) the use of stainless steel in the MPC design (as opposed to the use of carbon steel for the PWR Basket internals), and the resultant change in the basis for exemption from impact testing requirements.
4.2.5.3.9	This section, which contained a description of the stress analysis associated with the Basket Overpack, has been deleted since the design of the MPC does not require a contingency storage overpack. Since in this instance there is no need to preserve section numbering, this section and its header will be deleted in entirety.
4.2.5.4	An editorial change is made to the title of this section, adding initial capitalization to "Under" for consistency of heading capitalization.
4.2.5.4.1	The discussion of the Concrete Cask dead load analysis is revised by a determination that the old analysis for the PWR Basket remains bounding in the

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	absence of a Basket Overpack and use of the MPC. This determination is based on the MPC design basis weight, as reflected in the updated Table 4.2-4.
4.2.5.4.2	Reference to "PWR Basket" is changed to "MPC" as described previously.
	Two corrections are made to the second paragraph to properly reference the Concrete Cask instead of incorrect references to the Transfer Cask. The first sentence is revised from "...and then by the Transfer Cask bottom" to "...and then by the Concrete Cask bottom." The text within the parentheses in the last sentence is similarly revised from "at Transfer Cask center contact strip" to "at Concrete Cask center contact strip."
	The results of calculated stresses presented in the second paragraph for the Concrete Cask steel liner and center contact strip are revised to reflect the weight of the Holtec Transfer Cask containing a loaded MPC, which as indicated in Table 4.2-2 is greater than the weight of the loaded PWR Basket in its associated Transfer Cask.
4.2.5.4.3	A clarifying sentence is added to the second paragraph to indicate the basis for a determination that the thermal stress analysis of the Concrete Cask is bounding for normal and off-normal ambient conditions and for the maximum anticipated heat load. Thus, as described below for Table 4.2-11, the Table 4.2-11 values are conservatively "bounding."
4.2.5.4.4	For consistency and accuracy, "ACI 349" is changed to "ACI-349."
4.2.6	Reference to "PWR Basket" is changed to "MPC" as described previously.
	The first paragraph is revised to incorporate the change in the design decay heat load for the MPC from 26 kWt (upon which the PWR Basket was designed) to 17.4 kWt as described above for Section 3.3.7.1.
	Two editorial changes are made for clarification in the second paragraph. The first clarifies that no solar load was used "in the base case." The second eliminates a hyphen that had been inadvertently inserted between "day" and "light."
	The fourth paragraph is revised to clarify the classification of several thermal events postulated in Chapter 8 as either off-normal or hypothetical accident, as appropriate. The last sentence reflects a change in an assumption associated with the postulated full blockage of air flow condition. As discussed below for Section 8.2.7.1, this condition had been analyzed for the PWR Basket assuming that all Concrete Cask air inlets and all outlets are completely blocked. This accident has been reanalyzed

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	for the MPC assuming that all Concrete Cask air inlets (but not outlets) are completely blocked. This assumption is reasonable since the outlets are located on the upper sides of the Concrete Cask, such that their blockage is highly unlikely.
4.2.6.1	This section is revised to reflect the fact that the thermal properties used in the thermal hydraulic analyses are now derived from Holtec's thermal modeling and benchmarking to conform with incorporation of the Holtec MPC into the Trojan Storage System. The revised thermal properties are presented in an updated Table 4.2-13 of the Trojan ISFSI SAR, which is referenced in the first sentence of this section. The thermal analysis methodology and calculation detail for the Trojan Storage System is contained in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure. Other conforming changes include the elimination of temperature limits for coatings (since there are no coatings used in the MPC or Concrete Cask), and elimination of "(1992)" from the ASME Section III standard used to establish temperature limits for steel used in the Trojan Storage System. This latter change reflects the application of the 1992 version for the Concrete Casks and Failed Fuel Cans, and the 1995 version for the Trojan Storage System components designed by Holtec. Since the version of applicable ASME standards is specified for different components in other sections of the Trojan ISFSI SAR, this designator is deleted from this summary section. In consideration of the design of the MPC and using the new design basis Trojan-specific fuel characteristics (including a revised cooling time of nine years), the fuel cladding allowable temperature limit has been recalculated and incorporated into this section. Also recalculated and incorporated in the last paragraph is the maximum steady-state temperature of the design basis Trojan spent fuel that would occur during vacuum drying operations. A sentence is added that highlights the fact that not only is the maximum steady-state temperature during vacuum drying operations significantly below the short-term limit, but it is only slightly higher than the normal steady-state temperature limit. Thus, an administrative time limit for vacuum drying operations is not required to preclude fuel clad failure. However, the sentence that states this is eliminated since, for conservatism, the Trojan ISFSI technical specifications do specify time limits for fuel loading and vacuum drying.

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	Other editorial changes are made to this section to enhance readability and consistency. The footnote numbering is changed since a footnote in Section 4.2.5.4 already was numbered as Footnote 1.
4.2.6.2	This section is extensively revised to provide an overview of the MPC fuel basket design, including internal physical geometry and spacing and associated thermal and flow hydraulic details, as well as an overview of the Trojan Cask thermal model methodology. Besides the addition of the MPC design detail in this section, the major difference introduced herein is the benchmarked thermal solution methodology used by Holtec. Details of the benchmarking study (full-scale cask testing) are now included in this section. The thermal analysis methodology and calculation detail for the Trojan Storage System is contained in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
4.2.6.3	This section is extensively revised to provide a detailed summary of the global model (two-step modeling process) used to complete the thermal analysis of the Trojan Storage System. A description of the principal modeling conservatisms introduces new Subsections 4.2.6.3.1 through 4.2.6.3.4. New Subsection 4.2.6.3.5 summarizes changes to the generic MPC design for use of the MPC in the Transtor™ Concrete Cask, and new Subsection 4.2.6.3.6 summarizes other significant assumptions and parameters used to establish normal, off-normal, and accident conditions in the modeling process. The thermal analysis methodology and calculation detail for the Trojan Storage System is contained in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
4.2.6.4	This section is extensively revised to incorporate Holtec's thermal modeling to correspond with incorporation of the Holtec MPC into the Trojan Storage System. As indicated in the markup, this revision results in the elimination of Subsections 4.2.6.4.1 through 4.2.6.4.3, and provides essential features of the thermal models for the Trojan MPC exterior and Concrete Cask body. The thermal analysis methodology and calculation detail for the Trojan Storage System is contained in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
4.2.6.5	This section is extensively revised to incorporate Holtec's thermal modeling to correspond with incorporation of the Holtec MPC into the Trojan Storage System. As indicated in the markup, this revision results in the elimination of

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	Subsections 4.2.6.5.1 through 4.2.6.5.4, and provides essential features of the thermal model for the Trojan MPC interior. The thermal analysis methodology and calculation detail for the Trojan Storage System is contained in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
4.2.6.6	The wording in this section is revised to more precisely characterize the Table 4.2-12 data as maximum temperatures (as opposed to temperature distributions) for the normal, off-normal, severe environmental, and accident conditions. Clarification is also incorporated to clearly indicate that with one exception, the storage system temperatures remain below their applicable limits during normal, severe environmental, and hypothetical accident conditions. Two sentences are added at the end of this section to discuss the one exception.
4.2.6.7	Reference to "PWR Basket" is changed to "MPC" as described previously.
4.2.6.8	References to "PWR Basket" are changed to "MPC" as described previously. Conforming changes are made to reflect the difference in nominal helium backfill pressure present during normal operation of the MPC as compared to the PWR Basket, and to reflect the associated difference in the MPC maximum calculated internal pressure, as compared to that of the PWR Basket, for normal ambient conditions and during a postulated accident. A summary of the MPC pressure analysis and stress calculation at maximum normal design internal pressure is provided in Trojan ISFSI SAR Sections 4.2.5.3.3 and 4.2.5.3.7, respectively. A summary of the MPC pressure analysis for maximum accident condition design internal pressure is provided in Trojan ISFSI SAR Section 8.2.6. Calculation detail for these conditions is provided in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
4.2.6.9	An editorial change is made to the title of this section, adding initial capitalization to "Under" for consistency of heading capitalization.
4.2.7	References to "PWR Basket" are changed to "MPC" as described previously. Conforming changes are made to reflect differences in the criticality evaluation methodology applied to a loaded MPC as compared to the PWR Basket. The primary methodology difference results from use of a different evaluation code – Monte Carlo N-Particle Transport Code Version 4a (MCNP4a) – for the MPC. Several changes are made to the analysis assumptions, including taking allowance for neutron poison plates included in the MPC design (these plates were not credited in the criticality analysis for the PWR Basket), and assuming that the MPC

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	atmosphere is oxygen (as opposed to helium for the PWR Basket). This section also is revised to remove a limit on the quantity of fuel debris that was allowed in each PWR Basket. The basis for not applying this limit to the MPC is described above for Section 3.1.1.3. The changes in methodology and analysis assumptions result in slightly different calculated results, which are also provided in this section. Calculation details with regard to these analyses are provided in proprietary Holtec Report No. HI-2012681, "Criticality Evaluation for the Trojan ISFSI Completion Project," which is provided concurrently with this enclosure. Several editorial changes are made to this section for readability and consistency, including replacing the symbol "~" with "approximately," and capitalizing "Uranium," both in the second paragraph.
4.3	Reference to "failed fuel" is changed to "damaged fuel" as described previously.
4.3.1	References to "PWR Basket" are changed to "MPC," and discussion related to the Basket Overpack is removed as described previously. Reference to "vacuum drying" is changed to "moisture removal" to reflect the addition of the helium recirculation method as an option for achieving required MPC cavity dryness. Editorial changes include replacing "which" with "that" in the first sentence, and replacing "Trojan Nuclear Plant" with the acronym "TNP" that had been previously defined.
4.3.3	Reference to "PWR Basket" is changed to "MPC" as described previously.
4.3.5	References to "PWR Basket" are changed to "MPC" as described previously. The water specified for injection into the MPC-to-Transfer Cask gap is changed from "clean borated water or filtered fuel pool water" to "filtered water" for consistency with other SAR references, and to clarify that the gap flush water is not separately put through a boration process. Rather, the borated Spent Fuel Pool water is used, and is filtered such that contamination is removed without removing the boron.
4.3.6	An editorial change is made to the second sentence, replacing "which" with "that" for readability and grammatical correctness.
4.3.9	An "s" is added to "require" in the second sentence to correct a grammatical oversight. The periodic operational requirement for visual inspection of the Concrete Cask air vents for blockage is changed to correct an inadvertent inconsistency with the Trojan ISFSI technical specifications. Specifically, rather

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	than specifying inspection of both inlets and outlets, only inspection of the air inlets is specified.
4.3.11	References to "PWR Basket" are changed to "MPC" as described previously. An editorial change is made to the third sentence, replacing "which" with "that" to enhance readability and sentence structure.
4.4.1	References to "PWR Basket" are changed to "MPC" as described previously. Wording is added to the last sentence of the first paragraph to clarify that decontamination of the MPC is focused on "the top and upper end" of the MPC, since with installation of the annulus seal at top of, and the injection of flush water into, the gap between the MPC exterior and the Transfer Cask interior, the location of potential MPC contamination would be limited to the top and upper end of the MPC.
4.4.2	References to "PWR Basket" are changed to "MPC" as described previously.
4.5	References to "Shipping Cask" are changed to "Transport Cask" as described previously. The words "if needed" are added to the second sentence to indicate that repair and maintenance facilities for the Transport Casks are not anticipated.
4.6	Reference to "PWR Basket" is changed to "MPC" as described previously. Accordingly, the description of the MPC shell and fuel basket design is changed to reflect the design of the MPC as opposed to the PWR Basket design. This includes wording additions to reflect the construction of the MPC and MPC fuel basket using stainless steel material, except for the Boral that is incorporated into the fuel basket. Discussion of coatings is eliminated since no part of the stainless steel MPC is coated. Finally, the next-to-last sentence is revised editorially to enhance readability.
4.7	Reference to "PWR Basket" is changed to "MPC" as described previously. A related change is made to reflect differences in the design and terminology associated with MPC lifting components as compared to the PWR Basket. Specifically, "MPC Lift Cleats" replaces the "PWR Basket Hoist Rings" in the list of fuel handling components considered to be part of the Trojan ISFSI. Also in this list, the footnote after "Lifting Yoke" is replaced by the phrase "not used for lifting at the ISFSI" in parentheses. This phrase consists of wording that is in the footnote for the table in the following Section 4.7.1, and inadvertently had not been placed at the bottom of the page for this Section 4.7 Lifting Yoke reference.
4.7.1	Reference to "PWR Basket" is changed to "MPC" as described previously. Related changes are made to the table embedded in this section to reflect differences in the design and terminology associated with MPC lifting components as compared to

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	those associated with the PWR Basket. Specifically, in the list of components for which governing codes/standards are specified the governing code/standard for the Transfer Cask is revised to reflect that applied to the Holtec-designed Transfer Cask. An additional footnote is added that specifies that the Transfer Cask lifting trunnions have a different governing code/standard than the Transfer Cask itself. The Transfer Cask lifting trunnions and their associated governing code/standard are added to this table since, unlike the remainder of the Transfer Cask, they are considered as special lifting devices, and thus their governing code/standards (NUREG-0612 and ANSI N14.6) are different than that for the Transfer Cask itself (see below for Section 9.2.3.1.2 for additional details on the basis for the design of and design standards applied to the Transfer Cask and Transfer Cask lifting trunnions). Other changes to this table include an editorial change to the footnote reference for the Lifting Yoke, changing it from "2" to "3," to reflect the additional footnote added above it to the Transfer Cask. In addition, the MPC Lift Cleats replace the PWR Basket Hoist Rings in this table as described previously.
4.7.2.1	References to "PWR Basket" are changed to "MPC" as described previously. Reference to "Shipping Cask" is changed to "Transport Cask" as described previously. The fourth sentence is revised for clarification, adding "and Transfer Pad" to the description of locations where ISFSI handling operations will take place. A typographical error is corrected in the next-to-last sentence, replacing "...Section-4.2.2.1..." with "Section 4.2.2.1."
4.7.2.2	In the title of this section, "features" has been capitalized to be consistent with other section titles.
4.7.3.1	References to "PWR Basket" are changed to "MPC" as described previously. A summary description of the design of Holtec's Transfer Cask, designed for use with the MPC, is added to replace the previous description of the Transfer Cask design provided by BNFL Fuel Solutions for use with a PWR Basket. The design of the Trojan Transfer Cask is similar to Holtec's generically-approved HI-TRAC 100 Transfer Cask. Changes to the Trojan Transfer Cask design as a result of changing to the Holtec Transfer Cask are indicated in the markup. A significant difference in the design of the Holtec Transfer Cask, as compared to the Transfer Cask designed for use with the PWR Basket, is that only the Transfer

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	Cask lifting trunnions are considered to be special lifting devices designed and fabricated in accordance with NUREG-0612 and ANSI N14.6. The basis for this determination is provided below for Section 9.2.3.1.2. Other conforming and/or editorial changes are made to this section, including replacing reference to "Shipping Cask" with "Transport Cask" as described previously, and replacing "%" with "percent" and "trunnions" with "lifting trunnions" for consistency of usage.
4.7.3.2	References to "PWR Basket" are changed to "MPC" as described previously. Reference to "Shipping Cask" is changed to "Transport Cask" as described previously. The verb form in the first sentence is revised from "may" to "will" to more clearly communicate the intention to complete decommissioning of the TNP Spent Fuel Pool and site area licensed under 10 CFR 50 immediately following transfer of the spent nuclear fuel from the Spent Fuel Pool to the Trojan ISFSI. In the next-to-last sentence of the second paragraph, a section reference is updated to reflect changes to Chapter 5. The Chapter 5 changes involved renumbering Sections 5.1.1.5 and 5.1.1.6 to reflect the addition of a new Section 5.1.1.3, and revising Section 5.1.1.5 to reflect the elimination of the contingency storage overpack (and resultant transfer operations) from the Trojan Storage System design. Thus, the section reference in this Section 4.7.3.2 is changed from "Sections 5.1.1.5 and 5.1.1.6" to "Section 5.1.1.7."
4.7.3.4	For consistency, "Transfer Cask trunnions" is changed to "Transfer Cask lifting trunnions." The second sentence is revised to reflect the need to test the Holtec Lifting Yoke prior to first use to 150 percent of design load. When the Trojan ISFSI SAR was originally issued, the Lifting Yoke had already been load tested with a conservative test load of 300 percent of design load, and the verb tense in this sentence reflected that this load test was complete. With incorporation of the Holtec designs for the MPC, Transfer Cask, and Lifting Yoke, the verb tense is changed to reflect the fact that this load test, for the Holtec Lifting Yoke, still needs to be completed prior to first use. The basis for changing the test loading value from 300 percent to 150 percent is detailed below for Section 9.2.3.1.2.
4.7.3.5	This section and its title are revised to reflect a difference in design and terminology between lifting components of the MPC and those of the PWR Basket. There is a pair of MPC lifting devices called MPC lift cleats, which serve the function that was provided under the PWR Basket design by four PWR Basket lifting devices referred

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	to as Hoist Rings. A summary is added to this section that describes the MPC lift cleats and the MPC lid where the MPC lift cleats are attached. Like the Hoist Rings, the MPC lift cleats, attachment hardware, and threaded holes in the MPC lid are considered special lifting devices in accordance with NUREG-0612 and ANSI N14.6.
4.7.3.6	References to "PWR Basket" are changed to "MPC," and reference to the Basket Overpack is removed as described previously. References to "Shipping Cask" are changed to "Transport Cask" as described previously. The third paragraph incorporates a revision to clarify the design lift rating of the Trojan ISFSI mobile crane. Editorial changes at the end of this paragraph involve the insertion of "the guidance of" to describe the applicable NUREG, and the addition of a hyphen, such that "NUREG 0612" becomes "NUREG-0612." The last paragraph incorporates changes to clarify the function of limits switches or load limiters with regard to any potential overlift of the MPC during transfer operations at the Transfer Station. A new sentence is added that discuss the ability of the Transfer Cask top lid bolts to minimize any adverse impacts from such an overlift event. Finally, the last sentence is revised to reflect the elimination of specific discussion of fuel damage from the MPC drop analysis. This reflects the fact that the HI-STAR 100 System is designed and evaluated for a maximum deceleration of 60g. As described in the last paragraph of Trojan ISFSI SAR Section 8.2.3.2, studies of the capability of spent fuel rods to resist impact loads indicate that the most vulnerable fuel can withstand 63g in the most adverse orientation, such that designing the HI-STAR 100 System to a maximum deceleration of 60g will ensure that fuel rod cladding integrity and subcritical conditions are maintained during normal, off-normal, and accident conditions.
4.7.4.1	The description of the Transfer Cask weight used for the lifting device "analyses" (changed from the singular form "analysis") is changed from 215,000 lbs to "at least" 215,000 lbs. This change allows for the use of an even more conservative assumption for load weight in the analyses of lifting devices (see Section 4.7.4.1.2 use of a bounding 250,000 lbs in analysis of the primary stresses in the vicinity of the lifting trunnion attachment).
4.7.4.1.1	This section provides an evaluation of the adequacy of the Transfer Cask lifting trunnion design. This evaluation is revised to account for the Holtec Transfer Cask design, and for the weight of the loaded Holtec Transfer Cask/MPC that replaces the Transfer Cask/PWR Basket. Accordingly, the safety factor requirements are

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	increased to reflect the consideration of the Transfer Cask lifting trunnions as special lifting devices, such that they are designed in accordance with NUREG-0612 to use twice the safety factors specified in the guidelines of ANSI N14.6 for a single load path special lifting device (see discussion below for Section 9.2.3.1.2). Similarly, the dynamic load increase factor is increased to reflect the Holtec Transfer Cask design. The calculations of maximum shear stress, maximum bending stress, maximum principal stress, and factors of safety presented in this section are recalculated as shown in the markup. For the calculation of bending stress, the parameter "L" is revised to reflect the Holtec Transfer Cask lifting trunnion design. For the calculation of maximum principal stress, the parenthetical phrase "(conservative because they occur at different points)" is deleted since pure shear occurs along the length of the trunnion, and maximum bending occurs at the face of the Transfer Cask. Thus, both could potentially occur at the same location (i.e., at the face of the Transfer Cask). The last sentence is revised to reflect the fact that there are two lifting trunnions, to insert a hyphen between "NUREG" and "0612," and to insert an "N" between "ANSI" and "14.6."
4.7.4.1.2	This section provides a structural evaluation of the Transfer Cask wall. This evaluation is revised to account for the Holtec Transfer Cask design, and incorporates the ANSYS finite element analysis model used in Holtec's HI-STORM 100 System FSAR. Since as discussed below for Section 9.2.3.1.2, the Transfer Cask, except for the lifting trunnions, is not considered under the Holtec design to be a special lifting device, NUREG-0612 and ANSI N14.6 are not applied to the Transfer Cask (except lifting trunnions) design. Thus, reference to these guidance/standard documents is eliminated. A sentence is added at the end of this section that incorporates the guidance of Regulatory Guide 3.61 into the design of the Transfer Cask. The revised calculation results are indicated in the markup.

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4.7.4.1.3	This section provides a structural evaluation of the Transfer Cask shield door rails and welds. This evaluation is revised to account for the weight of a loaded MPC (as compared to a loaded PWR Basket), and for a slight size difference of the rails of the Holtec-designed Transfer Cask (as compared to the Transfer Cask designed for use with the PWR Basket). Design changes include an increase in the dynamic load amplification factor from 1.1 to 1.15. For the calculation of safety factors, a sentence is added that highlights the conservative application of ANSI N14.6 stress criteria. The revised calculation results are indicated in the markup. A change is made to the equation for calculating maximum shear stress at the inner groove weld to correct a typographical error and to be consistent with the parameter symbol used by Holtec in this calculation. Specifically, the parameter "δ_w" in this equation was intended to be "t_w." The Holtec symbol for this parameter is t_{groove}, and the value used by Holtec for this parameter is the size of the weld throat per AISC Section 3.7.
4.7.4.1.4	This section provides a structural evaluation of the welds attaching the rails to the Transfer Cask shell. This evaluation is revised to account for the weight and center of gravity of a loaded wet MPC (as compared to those of a loaded wet PWR Basket), and for a difference in the weld size and configuration for the Holtec-designed Transfer Cask (as compared to the Transfer Cask designed for use with the PWR Basket). Design changes include an increase in the dynamic load amplification factor from 1.1 to 1.15. The revised calculation results are indicated in the markup. Other changes include expressing the area and section moduli of the weld in units with respect to one inch of weld throat.
4.7.4.1.5	The structural evaluation of the top cover plate that is provided in this section is revised to reflect design differences between the top cover plate, referred to as the "top lid," designed by Holtec for use with the MPC and the top cover plate designed previously for use with the PWR Basket. The new top lid has a 27-inch diameter center opening and has 24 bolts (as opposed to 16 with the previous design) holding the top lid in place. The stresses are recalculated using formulas from Reference 10; the results are presented, but the majority of the calculation formulas are no longer reiterated in this section. The reference numbering is revised ("4.10" changed to "10") to be consistent with the other Trojan ISFSI SAR sections. A minor change is made to a parameter symbol in the equation for calculating shear stress on the outer edge of the top lid. Specifically, "τ_0" is changed to "τ" for consistency with its later use.

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4.7.4.1.6	The structural evaluation of the top cover plate bolts that is provided in this section is revised to account for the weight of a loaded wet MPC (as compared to a loaded wet PWR Basket), and for the increased number of bolts (24 versus 16) under the new design. Similar to Section 4.7.4.1.5, the top cover plate is referred to under the Holtec design as the top lid. The revised calculation results are indicated in the markup.
4.7.4.2	Reference to "PWR Basket" is changed to "MPC" as described previously. An editorial change eliminates the equation numbering "(4.7)" to be consistent with not using equation numbering in the Trojan ISFSI SAR.
4.7.4.3	This description of the Lifting Yoke provided in this section is revised to take into account the combined weight of the Holtec-designed Transfer Cask and a fully loaded MPC, as opposed to that of the previous Transfer Cask and PWR Basket. The governing guidance and code/standard for the design of the Lifting Yoke, NUREG-0612 and ANSI N14.6, respectively, are added to this section. The criteria from these references that are used to demonstrate that adequacy of the design is maintained are also incorporated into the section, replacing the calculation equation citation in this section. These criteria are consistent with the consideration of the Lifting Yoke as a special lifting device, as detailed further below for Section 9.2.3.1.2. The discussion of lowest service temperature for the Lifting Yoke is eliminated, since the Lifting Yoke is used to lift the loaded Transfer Cask only in the temperature-controlled Fuel Building.
4.7.4.4	The description of the PWR Basket lifting devices – Hoist Rings – is replaced by a description of the MPC lifting devices – MPC lift cleats. With the exception of the MPC lift cleat analysis, the MPC lift devices analyses are provided in the HI-STAR 100 FSAR that is now referenced in this section. Accordingly, the evaluation of the adequacy of the MPC lift cleat design that is presented in this section is significantly revised, and includes the incorporation of the NUREG-0612 and ANSI N14.6 criteria that are used to demonstrate that adequacy of the design is maintained. These criteria are consistent with the consideration of the MPC lift cleats as special lifting devices.
4.7.5.1	This description of the Transfer Cask heat transfer analysis presented in this section is revised to incorporate the MPC and Transfer Cask designed by Holtec. The analysis methodology was changed, as the ANSYS/THERMAL finite element model used in the previous design (for the PWR Basket and associated Transfer Cask) is replaced with the FLUENT finite volume model, similar to that described

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	below for and in Section 4.2.6. The methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure. As with the analysis completed for the previous design (PWR Basket), the analysis assumes an ambient temperature of 75°F. However, the analysis as presented in this section is revised in that it also has been completed using an ambient temperature value of 100°F.
4.7.5.2	This section is significantly revised to provide a detailed description of the thermal analysis performed for vacuum conditions that the MPC cavity will experience during vacuum drying operations. This rewrite results in new Subsections 4.7.5.2.1 through 4.7.5.2.3. As with the other thermal-hydraulic analyses for the MPC, the FLUENT thermal model was used instead of the ANSYS/THERMAL finite element code (which was used for thermal modeling of the PWR Basket). Significant details are provided in the markup. Additional methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012725, "Computation of the Peak Cladding Temperature During Vacuum Drying of Trojan Fuel (Trojan ISFSI Completion Project)" which is provided concurrently with this enclosure.
4.8	Section 4.8, "References," is renumbered as Section 4.9, and a new Section 4.8 is inserted that provides an evaluation of materials selected for use in the Trojan Storage System. This review satisfies the requirements of NRC Interim Staff Guidance 15. The previous Section 4.8, now Section 4.9, includes changes to references as necessary to reflect the Holtec designs and analyses associated with the Trojan Storage System. These changes include: (1) the deletion of Reference 1 since the TranStor™ Shipping Cask will not be used for transporting Trojan spent nuclear fuel; (2) As described previously, the code used in the criticality evaluation was changed. Correspondingly, Reference 9 – the basis for the criticality evaluation – is replaced with the reference document supporting the new code; (3) Updates Reference 10 to reflect the Sixth Edition (1989); (4) New References 12 through 21 are added; and (5) Editorial corrections to Reference 4 (corrects capitalization errors), Reference 5 (adds closing quotation mark to title), and Reference 11 (eliminates unnecessary comma after "titled").

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Table 4.2-1	References and design specifications related to the PWR Basket are changed to those for the MPC, and reference and design specifications related to the Basket Overpack are removed. Specifically: The "Materials" section is revised to reflect the ASME code applicable to the MPC rather than to the PWR Basket. Thus, "...ASME Section III...1992 including Addenda through 1994" is changed to "...ASME Section III...1995 including Addenda through 1997." The "Fabrication" section is revised to incorporate several ASME code changes reflecting applicability to the MPC as opposed to the PWR Basket. In addition, the specification for magnetic particle examination of welds is removed since weld examination will not be conducted by the magnetic particle method. Other wording changes are incorporated to reflect the application of ASME codes/standards to the MPC fabrication and closure welds. Other changes include replacing "PWR Basket internals" with "MPC fuel basket" to conform with Holtec design and terminology, and elimination of the title of ANSI N14.5 (for helium leak testing) for consistency with other code/standard references in this table. The edition of SNT-TC-1A applied to qualification of personnel performing weld examinations is changed from "1984" to "1992," to reflect the change to the Holtec-designed MPC. The "Quality Assurance" section is revised to replace "PWR Basket" with "MPC."
Table 4.2-1a	Code exceptions applicable to the Trojan ISFSI Transfer Cask and MPC designed by Holtec are added to this table, and code exceptions applicable to the PWR Basket and the Transfer Cask designed by BNFL Fuel Solutions and not applicable to the Holtec designs are eliminated. Exceptions to requirements that are applicable to both have been updated as necessary to reflect the exception as applied specifically to the Holtec designs.
Table 4.2-2a	This table has been updated to incorporate two additional ACI-318 and ACI-319 code exceptions that apply to design of the Concrete Casks. The omission of these items was recently identified during a review of the Concrete Cask as-built packages, and this oversight was addressed by the site Corrective Action Program. One of the corrective actions for this condition was to add the omitted code exceptions to this Table 4.2-2a. Justification for these code exceptions is provided in the revised table. The footnote is revised to reflect that the third item in the table is also an exception to ACI-318.

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Table 4.2-3	On Page 2 of 5, under the entry for "10 CFR 72.122(f)," last column, the extra space between "structures" and the comma is eliminated for correctness of punctuation. On Page 2 of 5, under the entry for "10 CFR 72.122(h)," last column, the reference to "PWR Basket" is changed to "MPC," as described previously. On Page 3 of 5, under the entry for "10 CFR 72.122(l)," last column, the references to "PWR Baskets" are changed to "MPCs," and "transportation cask" is changed to "Transport Cask." The reason for these changes is described previously. On Page 3 of 5, under the entry for "10 CFR 72.124," last column, the references to "PWR Basket" are changed to "MPC," as described previously. The description of the bases for conformance to criticality requirements is revised to reflect the criticality analysis performed for the Trojan Storage System incorporating the MPC. The changes are clearly indicated in the markup, and are supported in Section 4.2.7. On Page 4 of 5, under the entry for "10 CFR 72.126(d)," last column, the reference to "PWR Basket" is changed to "MPC" as described previously, and a reference to Section 8.2.1 is added since that section presents an analysis of hypothetical accident leakage from the MPC (Section 8.1.4 analyzes off-normal MPC leakage). On Page 5 of 5, under the entry for "10 CFR 72.130," last column, the reference to "PWR Baskets" is changed to "MPCs" as described previously.
Table 4.2-4	The nominal weights and centers of gravity for the PWR Basket and Basket Overpack are eliminated, and are replaced with the nominal weights and centers of gravity for the MPC. Similarly, the nominal weights and centers of gravity for the Holtec-designed Transfer Cask in various loading configurations replace the nominal weights and centers of gravity for similar loading configurations of the Transfer Cask that had been designed by BNFL Fuel Solutions. With incorporation of the Holtec designs into the Trojan Storage System, the footnote no longer applies and is eliminated.
Table 4.2-5	This table eliminates one material specification, ASTM A-588, that no longer applies under the Holtec designs, and adds several others that now apply due to incorporation of the Holtec designs into the Trojan Storage System. These changes result in an addition of two pages to this previously three-page table (i.e., now five pages). Also eliminated is a redundant entry for mechanical properties at 400°F for ASME A-350 steel on Page 1 of the table.

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Table 4.2-7	The maximum PWR Basket component thermal stresses that had been summarized in this table are replaced with a summary of maximum thermal stresses for the applicable components of the MPC. Accordingly, reference in the title to "PWR Basket" is changed to "MPC." A footnote is added that clarifies that the indicated maximum thermal stresses include the cumulative effects of normal operating internal pressure and thermal loading.
Table 4.2-8	The PWR Basket component stresses listed in this table are replaced with applicable MPC component stresses, and accordingly, reference to "PWR Basket" is changed to "MPC." The Basket Overpack component stresses are removed from the table, and accordingly, reference to the "Basket Overpack" is eliminated as described previously. The manner in which the stress evaluation results are presented is slightly different. As described in Trojan ISFSI SAR Section 4.2.5.3.5, the first column of results, which is labeled as "Design Internal Pressure," reports the maximum stresses in the MPC enclosure vessel due solely to design internal pressure. The next column ("Normal Handling") provides the maximum stresses in the MPC due to the combined effect of internal pressure plus handling loads. Note that the dead weight of the MPC is considered part of the normal handling load, which is defined as a 2g acceleration. Since the fuel basket can expand freely under the most severe accident condition thermal gradient, the thermal loads do not contribute to the primary stress levels in the MPC. The thermal stresses in the MPC, which are classified as secondary stresses, are reported in Table 4.2-7 as described above. Bounding reference temperatures are used, however, to determine the ASME allowable stress limits in Table 4.2-8, as indicated in the revised Footnote b.
Table 4.2-9	The summary of PWR Basket maximum and minimum pressures that had been summarized in this table are replaced with a summary of maximum and minimum pressures for the MPC. Accordingly, reference in the title to "Basket" is changed to "MPC." The presentation of the pressure analysis results in this table is revised to include a column for design basis pressure limits applicable to the MPC. A summary of the MPC pressure analysis and stress calculation at maximum normal design internal pressure is provided in Trojan ISFSI SAR Sections 4.2.5.3.3 and 4.2.5.3.7, respectively. A summary of the MPC pressure analysis for maximum accident condition design internal pressure is provided in Trojan ISFSI SAR Section 8.2.6. Calculation detail for these conditions is provided in proprietary

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	Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure. The summary of Basket Overpack maximum and minimum pressures that had been summarized in this table are eliminated since a Basket Overpack is not applicable to use of the MPC.
Table 4.2-11	The maximum Concrete Cask thermal stresses that are summarized in this table are those that had been calculated for the Concrete Cask loaded with a PWR Basket using a conservative temperature gradient of 104°F. This bounds the results applicable to the Trojan Storage System with the loaded MPC for the normal and off-normal ambient conditions and the maximum anticipated heat load thermal gradient of 91°F as shown in Table 4.2-12 for the 12-hour maximum thermal accident condition. Therefore, this Table 4.2-11 retains the conservative bounding values, and only the title of the table is changed to reflect that these values are bounding.
Table 4.2-12	This table had provided the results of thermal analyses for normal, off-normal, and hypothetical events/accidents involving the Concrete Cask loaded with a PWR Basket and/or Basket Overpack. Since a Basket Overpack is not applicable to use of the MPC, all analyses results for the loaded Concrete Cask with Basket Overpack have been eliminated from the table. The remaining table results are from calculations that have been rerun for the Concrete Cask loaded with an MPC, or for the Holtec Transfer Cask containing an MPC, and with the revised calculation assumptions as discussed in the applicable sections covering normal, off-normal, and accident thermal analyses (e.g., 17.4 kWt versus 26 kWt, all inlets blocked versus all inlets and outlets blocked, initial ambient temperature of 100°F versus 75°F for the all inlets blocked event, etc.). With the exception of the "all inlets blocked" scenario and the "MPC in Transfer Cask with Vacuum" scenario, the calculation detail for these results is provided in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure. For the "all inlets blocked" scenario, the methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012697, "Transient Thermal-Hydraulic Analysis of the Trojan ISFSI," which is provided concurrently with this enclosure. Finally, for the "MPC in Transfer Cask with Vacuum" scenario, the calculation detail for these results is summarized in Trojan ISFSI SAR Section 4.7.5, and the formal calculation is provided in proprietary Holtec Report

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	No. HI-2012725, "Computation of the Peak Cladding Temperature During Vacuum Drying of Trojan Fuel (Trojan ISFSI Completion Project)" which also is provided concurrently with this enclosure. As described in Holtec Report HI-2012676, Section 7.0, the off-normal 10 percent fuel pin failure condition has not been explicitly analyzed and is eliminated from this table, since the results are bounded by the zero (0) percent fuel pin failure assumption for temperature field evaluations. Specifically, the zero percent fuel rods rupture assumption minimizes the cavity pressure to understate heat dissipation for fuel temperature calculations. Thus, for postulates such as the 10 percent rupture, these temperature fields are grossly overstated for cavity pressure calculations.
Table 4.2-13	The thermal properties that were used in the thermal-hydraulic analyses for the Trojan Storage System are updated to reflect the incorporation of the Holtec designs for the MPC and Transfer Cask. As stated in Trojan ISFSI SAR Section 4.2.6.1, the derived parameters (effective thermal conductivities) are discussed in Trojan ISFSI SAR Sections 4.2.6.3 and 4.2.6.5, and in Reference 16 of Trojan ISFSI SAR Chapter 4.
Table 4.2-14	This table had contained a cooling air flow analysis summary for the Trojan Storage System that assumed use of a PWR Basket loaded with a bounding decay heat load of 26 kWt. The results contained in this table are replaced with results of a new analysis of cooling air flow for the Trojan Storage System with an MPC loaded with a bounding 17.4 kWt decay heat load as described previously. The elevation readings are eliminated since this information is not pertinent to the results of the MPC thermal-hydraulic model. The calculation detail for these results is provided in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
Table 4.2-15	Table 4.2-15 had presented coatings criteria for the PWR Basket and Overpack. These criteria are no longer applicable since the PWR Basket is replaced with the stainless steel MPC that is not coated, and a contingency storage overpack is no longer applicable with use of the MPC. Thus, this table is deleted.

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Table 4.7-2	This table had contained structural analysis results applicable to the Transfer Cask designed by BNFL Fuel Solutions to support movement of the PWR Basket. The results contained in this table are replaced with results of new analyses of components of the Transfer Cask designed by Holtec to support movement of the MPC. The analyses that produce these results, including calculation assumptions (e.g., design standards, etc.) and methodology are described in Trojan ISFSI SAR Section 4.7.4.
Figure 4.2-1	This figure, which had provided a pictorial elevation and cross section description of the PWR Basket, is replaced by two new figures, Figures 4.2-1a and 4.2-1b, which provide similar detail of the MPC. Figure 4.2-1a provides an elevation view that indicates the major MPC confinement boundary components, as well as the locations of the vent and drain port penetrations. Figure 4.2-1b provides a cross section view that indicates MPC fuel basket geometry. Additional drawing detail is provided in the updated Trojan ISFSI SAR Appendix A drawing PGE-001, Revision 2, and in proprietary Holtec Drawing Nos. 3490, 3518, and 3663 provided concurrently with this enclosure.
Figure 4.2-3	This figure, which had provided detail of the PWR Basket Overpack design, is deleted since the design of the MPC does not require a contingency storage overpack.
Figure 4.2-8	This figure is revised to eliminate the nominal weights and centers of gravity associated with the PWR Basket, Concrete Cask loaded with a PWR Basket, and the Transfer Cask designed for use and loaded with the PWR Basket, and to replace them with the nominal weights and centers of gravity associated with the MPC, Concrete Cask loaded with the MPC, and the Transfer Cask designed for use and loaded with the MPC. The portion of this figure illustrating the weight and center of gravity of the empty Concrete Cask is unchanged since the Trojan Storage System will use the original TranStor™ Concrete Cask.
Figure 4.2-9; Figure 4.2-10	These figures are revised to reflect the updated Trojan Storage System thermal analysis model as described in detail in Sections 4.2.6.2, 4.2.6.3, and 4.2.6.4. The calculation detail that provided these figures is detailed in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
Figure 4.2-11	This figure previously provided a graphical representation of the PWR Basket temperature distribution that was generated using the ANSYS model based on a 75°F ambient temperature and a design decay heat load of 26 kW in the PWR Basket contained in the Concrete Cask. Because the PWR Basket has been replaced

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	as part of the Trojan Storage System by the MPC, this figure is no longer pertinent. A corresponding figure applicable to the MPC inside the Concrete Cask has been added as Figure 4.2-13; the new Figure 4.2-13 was generated using the FLUENT model based on a 75°F ambient temperature and the updated design decay heat load of 17.4 kW. A new Figure 4.2-11 is added to pictorially illustrate the homogenization concept that is incorporated into the MPC thermal model for each MPC fuel basket storage cell. The figure illustrates this concept by showing the cross section of a storage cell and its "equivalent" square section, i.e., a section characterized by an effective thermal conductivity. This process is summarized in Trojan ISFSI SAR Section 4.2.6.5, and the calculation detail is provided in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
Figure 4.2-12	This figure previously provided a graphical representation of the PWR Basket temperature distribution that was generated using the ANSYS model based on a 100°F ambient temperature and a design decay heat load of 26 kW in the PWR Basket contained in the Concrete Cask. Because the PWR Basket has been replaced as part of the Trojan Storage System by the MPC, this figure is no longer pertinent. A corresponding figure applicable to the MPC inside the Concrete Cask has been added as Figure 4.2-14; the new Figure 4.2-14 was generated using the FLUENT model based on a 100°F ambient temperature and the updated design decay heat load of 17.4 kW. A new Figure 4.2-12 is added to pictorially illustrate the homogenization concept that is incorporated into the MPC thermal model for the MPC cross section. The figure illustrates this concept by showing the cross section of the MPC and its "equivalent" two-zone section. This process is summarized in Trojan ISFSI SAR Section 4.2.6.5, and the calculation detail is provided in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
Figure 4.2-13	This figure previously provided a graphical representation of the PWR Basket temperature distribution that was generated using the ANSYS model based on a 125°F ambient temperature and a design decay heat load of 26 kW in the PWR Basket contained in the Concrete Cask. Because the PWR Basket has been replaced as part of the Trojan Storage System by the MPC, this figure is no longer pertinent. A corresponding figure applicable to the MPC inside the Concrete Cask has been

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	added as Figure 4.2-15; the new Figure 4.2-15 was generated using the FLUENT model based on a 125°F ambient temperature and the updated design decay heat load of 17.4 kW. As discussed above for Figure 4.2-11, the new Figure 4.2-13 provides a graphical representation of the MPC temperature distribution generated using the FLUENT model based on a 75°F ambient temperature and the updated design decay heat load of 17.4 kW.
Figure 4.2-14	This figure previously provided a graphical representation of the PWR Basket temperature distribution that was generated using the ANSYS model based on a 75°F ambient temperature and a design decay heat load of 26 kW in the PWR Basket contained in the Transfer Cask. Because the PWR Basket and associated Transfer Cask have been replaced as part of the Trojan Storage System by the MPC and the Holtec Transfer Cask, this figure is no longer pertinent. A corresponding figure applicable to the MPC inside the Holtec-designed Transfer Cask has been added as Figure 4.7-9; the new Figure 4.7-9 was generated using the FLUENT model based on a 75°F ambient temperature and the updated design decay heat load of 17.4 kW. As discussed above for Figure 4.2-12, the new Figure 4.2-14 provides a graphical representation of the MPC temperature distribution generated using the FLUENT model based on a 100°F ambient temperature and the updated design decay heat load of 17.4 kW.
Figure 4.2-15	This figure previously provided a graphical representation of the PWR Basket temperature distribution generated using the ANSYS model based on a 100°F ambient temperature and a design decay heat load of 26 kW in the PWR Basket contained in the Transfer Cask. Because the PWR Basket and associated Transfer Cask have been replaced as part of the Trojan Storage System by the MPC and the Holtec Transfer Cask, this figure is no longer pertinent. A corresponding figure applicable to the MPC inside the Holtec-designed Transfer Cask has been added as Figure 4.7-10; the new Figure 4.7-10 was generated using the FLUENT model based on a 100°F ambient temperature and the new design decay heat of 17.4 kW. As discussed above for Figure 4.2-13, the new Figure 4.2-15 provides a graphical representation of the MPC temperature distribution generated using the FLUENT model based on a 125°F ambient temperature and the updated design decay heat load of 17.4 kW.

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Figure 4.7-1	The drawing of the Transfer Cask provided in this figure is revised to reflect the change from use of the Transfer Cask designed for use with a PWR Basket to use of the Transfer Cask designed by Holtec for use with the MPC. A summary of the Transfer Cask design is provided in Trojan ISFSI SAR Section 4.7.3.1.
Figure 4.7-2	The drawing of the Transfer Cask lifting trunnion provided in this figure is revised to reflect the change from use of the Transfer Cask designed for use with a PWR Basket to use of the Transfer Cask designed by Holtec for use with the MPC. A brief description of the Transfer Cask lifting trunnion design is provided in the fourth paragraph of Trojan ISFSI SAR Section 4.7.3.1.
Figure 4.7-4	The drawing of the Transfer Cask Lifting Yoke provided in this figure is revised to reflect the change from use of the Transfer Cask and Transfer Cask Lifting Yoke designed for use with a PWR Basket to use of the Transfer Cask and Transfer Cask Lifting Yoke designed by Holtec for use with the MPC. A brief description of the Transfer Cask Lifting Yoke function and design is provided in Trojan ISFSI SAR Section 4.7.3.4. Additional drawing detail is provided in the updated Trojan ISFSI SAR Appendix A drawing PGE-005, Revision 2, and in proprietary Holtec Drawing No. 3668 provided concurrently with this enclosure.
Figure 4.7-5	The graphical representation of the ANSYS thermal analysis model applicable to the Transfer Cask designed for use with a PWR Basket is no longer pertinent to the Trojan Storage System, since the Trojan ISFSI will incorporate use of the Transfer Cask designed by Holtec for use with the MPC. Therefore, this figure has been replaced with the phrase: "Figure 4.7-5 deleted. This page intentionally blank." A corresponding figure applicable to the Holtec-designed HI-TRAC Transfer Cask has been added as new Figure 4.7-8; the new Figure 4.7-8 was generated using the FLUENT thermal analysis model.
Figure 4.7-6	The drawing of the Transfer Cask Shield Door Rail design provided in this figure is revised to reflect the change from use of the Transfer Cask designed for use with a PWR Basket to use of the Transfer Cask designed by Holtec for use with the MPC. Changes to the top view include revising the "C to D" weld from a curved to a straight length weld, and elimination of extraneous detail. The other two views are also revised to reflect the Holtec Transfer Cask shield door rail design, which are apparent from a comparison of the two drawings. These design changes do not materially change the operation of the Transfer Cask bottom doors as compared to the bottom doors of the Transfer Cask used to move the PWR Basket. Additional detail of the Holtec Transfer Cask is provided in the

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	updated Trojan ISFSI SAR Appendix A drawing PGE-004, Revision 2, and in proprietary Holtec Drawing No. 3555 provided concurrently with this enclosure.
Figure 4.7-7	The graphical representation of the through-wall temperature contours applicable to the Transfer Cask designed for use with a PWR Basket is no longer pertinent to the Trojan Storage System, since the Trojan ISFSI will incorporate use of the Transfer Cask designed by Holtec for use with the MPC. Therefore, this figure has been replaced with the phrase: "Figure 4.7-7 deleted. This page intentionally blank." A corresponding figure applicable to the Holtec-designed Transfer Cask has been added as new Figure 4.7-11.
Figure 4.7-8	Applicable to the Holtec-designed Transfer Cask, a new Figure 4.7-8 is added to the SAR as discussed above for Figure 4.7-5. This figure was generated using the FLUENT thermal analysis model. The calculation detail that supports this figure is detailed in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
Figure 4.7-9	Applicable to the MPC inside the Holtec-designed Transfer Cask, a new Figure 4.7-9 is added to the SAR as discussed above for Figure 4.2-14. This figure was generated using the FLUENT model based on a 75°F ambient temperature and the updated design decay heat load of 17.4 kW. The calculation detail that supports this figure is detailed in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
Figure 4.7-10	Applicable to the MPC inside the Holtec-designed Transfer Cask, a new Figure 4.7-10 is added to the SAR as discussed above for Figure 4.2-15. This figure was generated using the FLUENT model based on a 100°F ambient temperature and the updated design decay heat load of 17.4 kW. The calculation detail that supports this figure is detailed in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
Figure 4.7-11	Applicable to the Holtec-designed Transfer Cask, a new Figure 4.7-11 is added to the SAR as described above for Figure 4.7-7, to indicate the Transfer Cask through-wall temperature distribution. The calculation detail that supports this figure is detailed in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.

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Figure 4.7-12, Figure 4.7-13	Applicable to the Holtec-designed Transfer Cask, new Figures 4.7-12 and 4.7-13 are added to the SAR. These figures show the vacuum transient peak cladding temperature for the design maximum heat load of 17.4 kWt and a bounding heat load of 15 kWt, respectively. The analysis of this condition is described in Trojan ISFSI SAR Section 4.7.5. Additional methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012725, "Computation of the Peak Cladding Temperature During Vacuum Drying of Trojan Fuel (Trojan ISFSI Completion Project)" which is provided concurrently with this enclosure.

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5.1	References to "PWR Basket" are changed to "MPC" to conform to changes in component and system design and terminology. Editorial changes include changing "which" to "that" in the first sentence for grammatical correctness, and eliminating inappropriate detail with respect to the use of "air pads in the Fuel Building Bay," since this detail is provided in other more appropriate sections.
5.1.1	References to "PWR Basket" are changed to "MPC" as described previously. In the first paragraph, references to "failed" spent nuclear fuel assemblies are changed to "damaged" spent nuclear fuel assemblies to be consistent with the terminology defined in the Trojan ISFSI Technical Specifications, Section 1.1, for such fuel assemblies. Also, an editorial change is made for clarification and consistency with the title of Section 5.1.1.2 to specify that Section 5.1.1.2 describes MPC loading and "sealing" operations. In the second paragraph, verb tenses are updated from "will be" to "have been" or "has been" to reflect the fact that visual inspection and examination of the spent fuel and fuel debris have been completed. Additional editorial changes are made to clarify that the fuel will "also" be visually inspected during loading, and to clarify that verification of fuel cladding structural integrity to contain fuel pellets applies to "intact fuel assemblies."
5.1.1.1	References to "failed" fuel are changed to "damaged" fuel to be more consistent with NRC and industry terminology. References to "PWR Basket" are changed to "MPC" as described previously. In the second paragraph, the reference to the MPC fuel basket "storage sleeves" is changed to "storage cells" to conform to Holtec terminology. In addition, reference to "vacuum dried" is changed to "dried" to reflect the option added under the new design for drying to be performed by helium recirculation. In the third paragraph, the first sentence is eliminated since some materials considered to be "fuel debris" are not placed into Process Cans, but rather are placed directly into Failed Fuel Cans. The original intent of this sentence was to reflect that Process Cans contain fuel debris, but that intent was not captured in the wording. Elimination of the sentence removes the potential for misinterpretation

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	and results in the remainder of the paragraph being consistent with the definition of fuel debris as defined in Trojan ISFSI Technical Specification 1.1. The verb tense has been updated from "is" to "was" to reflect the fact that the processing of fuel debris is completed. Accordingly, an additional sentence has been added to describe the major steps completed in sealing the fuel debris in Process Can Capsules. The reference to the "fuel debris processing project" is changed to "Fuel Debris Processing Project" for consistency of capitalization.
5.1.1.2	References to "PWR Basket" are changed to "MPC" as described previously. Associated changes are made to reflect component design and terminology differences between the MPC and PWR Basket. In the last sentence of the first paragraph, editorial changes are made to eliminate inappropriate capitalization and to clarify and/or emphasize that the description of events in this section is general in nature and will be finalized prior to the commencement of spent fuel loading into the MPCs. The second paragraph is revised to reflect the design of the Holtec Transfer Cask and Transfer Cask lid and the Holtec MPC and MPC lid retention system, as opposed to components of similar function designed by the previous vendor. Specifically, an "annulus seal" replaces "radiation shielding shims" in the gap between the Transfer Cask and MPC (previously PWR Basket). Also, under the new design, the Transfer Cask lid is bolted onto the Transfer Cask after (as opposed to before) the MPC has been loaded and returned from the Cask Loading Pit to the Decontamination and Assembly Station (DAS). Drawing details incorporating Transfer Cask design changes are submitted to the NRC concurrently with this enclosure. In addition, this and the fourth paragraph are changed to reflect that the Holtec-designed MPC lid retention system is not an integral part of the Transfer Cask lid (as with the previous design), and is engaged following fuel loading and lowering of the MPC lid onto the loaded MPC. The description in the second paragraph of the movement of the MPC into the Transfer Cask in the Cask Wash Pit area is revised editorially to indicate the point at which Transfer Cask cleaning and examination is performed, and to emphasize that at this point in the loading process, the MPC is "empty." Also in the second paragraph, the second sentence is revised to preclude potential misinterpretation with regard to the Fuel Building overhead crane design. Specifically, the parenthetical statement "(independent dual hook design)" is eliminated to make

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	clear that the Fuel Building overhead crane does not incorporate a dual load path design. Rather, the Fuel Building crane uses a double hook, a main hook and an auxiliary hook, which transfer the load through the same lifting load path. In the third paragraph, the water specified for use in the gap flush system is changed from "borated water" to "filtered Spent Fuel Pool water" to clarify that the gap flush water is not separately put through a boration process. Rather, the borated Spent Fuel Pool water is used, and is filtered such that contamination is removed without removing the boron. The fourth paragraph is revised to add a description of the installation of the Holtec-designed MPC lid and MPC lid retention system, and as a conforming change, to replace "shield lid" with "MPC lid." Other editorial revisions to this paragraph include emphasizing that at this point in the loading process, the Transfer Cask is "loaded" with a fully loaded MPC; adding initial capitalization to "Cask Loading Pit" and "Transfer Cask" for consistency; replacing reference to the "93' area" with the "DAS" for consistency and specificity; and with respect to the purpose for moving the loaded Transfer Cask to the DAS, replacing the specific task "welding" with the more general "MPC preparation." The fifth paragraph is revised editorially for clarification and consistency of terminology. Specifically, "cask preparation area" is changed to "DAS," units of physical dimensions are spelled out, and a grammatical error is corrected, such that "...and route to plant liquid radwaste systems" becomes "...and liquid waste will be routed to the plant liquid radwaste system." In the sixth paragraph, "MPC lid-to-shell weld leakage testing" is added to the list of items that must be completed within an administratively controlled period of time. The beginning of this controlled time period is changed from "...when the PWR Basket top is lifted from the Cask Loading Pit" to "...when the MPC lid is lowered onto the loaded MPC in the Cask Loading Pit, segregating the water inside the MPC from the rest of the water in the Cask Loading Pit." Conforming and/or editorial changes are made to the seventh paragraph, including specifying a particular section of the section reference, correcting the section reference numbering to be consistent with Section 5.7, and clarifying the meaning and flow of the third and fourth sentences.

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	In the eighth paragraph, an "annulus seal" replaces "radiation shielding shims" in the gap between the Transfer Cask and MPC (previously PWR Basket) to reflect the Holtec design. The purpose for the removal of this component from the Transfer Cask/MPC gap is enhanced by adding "MPC lid welding" as a purpose. The description of the check for loose surface contamination on the MPC is revised to clarify the extent of this check with respect to accessibility limitations. Finally, the reference to "Chapter 7" for a description of the MPC exterior contamination limits is revised to be more specific in reference to their being "established in Section 7.2.2."
	In the ninth paragraph, lowering of the MPC water level in preparation for lid welding is changed from "...lowered by approximately 75 gallons" to "...lowered by approximately 50 to 120 gallons." This change provides a range for ease of field implementation, while continuing to ensure that the MPC lid weld is not affected by water percolation. The specification for the installation of shims between the lid and shell is changed from "...are installed..." to "...may be installed...to optimize welding conditions, as necessary," and a sentence is added to address variances in shim details. The description of the use of automated or manual welding has been revised editorially to clarify that the automated welding system is the normal method of performing the MPC lid (formerly "shield lid") weld, but that "...manual welding may be used as desired or necessary." A new sentence is added to reflect the multi-layer dye-penetrant examination requirements associated with the MPC lid-to-shell weld, as described in detail in Section 3.3.2.2. Finally, punctuation errors in this paragraph are corrected.
	Several changes are made in the tenth paragraph, as follows: (1) The hydrostatic test pressure specified had been "...approximately 15 psig which exceeds 1.5 times the [PWR Basket] normal operating pressure." This hydrostatic test pressure specification is changed to "...at least 1.25 times the maximum normal operating pressure of 100 psig," to reflect the difference in design maximum normal operating pressure between the PWR Basket and the MPC. A hydrostatic test pressure of 1.25 times the maximum normal operating pressure is consistent with the applicable ASME Section III, Subsection NB. (The "1.5 times the normal operating pressure," had been specified for the PWR Basket due to its extremely low normal operating pressure [10 psig], and the relative ease to apply a "1.5 times" test pressure with such a low normal operating pressure.) (2) A sentence is added to reflect the performance of dye-penetrant examination following successful hydrotesting. This sentence replaces a similar sentence that had specified dye-penetrant examination

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	following helium leak testing. (3) After the MPC hydrostatic test is completed, "...approximately 20 gallons of water is removed..." from the MPC as opposed to the approximately 75 gallons that was removed from the PWR Basket. This change reflects minor differences in the preparation for helium leak test between the MPC and PWR Basket, and has no adverse impact on the ability to successfully pressurize the MPC with helium. (4) To reflect design differences between the MPC and PWR Basket, the helium leak rate test for the MPC is conducted at a pressure of approximately 90 psig, with a maximum allowable leak rate of $<5 \times 10^{-6}$ atmosphere-cubic centimeters per second, versus a PWR Basket helium leak rate test pressure that had been specified as approximately 15 psig with a maximum leak rate of 1×10^{-4} standard cubic centimeters per second. (5) The discussion of the structural lid weld and associated weld examination is eliminated, since the structural lid is only applicable to the PWR Basket and not applicable to the MPC.
	The eleventh paragraph is revised to reflect the new MPC cavity cooling option – helium recirculation – added under the Holtec design. Several changes are reflected in the twelfth paragraph, as follows: (1) The evacuation of the PWR Basket was to be "initiated by pumping the water back into the Spent Fuel Pool or a suitable holding tank." This is revised for the MPC, such that evacuation (now referred to as "blowdown") is "initiated by injecting pressurized helium into the vent port and directing the resulting water...back into the Spent Fuel Pool or a suitable holding tank." This change reflects the design of the Holtec system used for draining the MPC. (2) Helium will be the only inert gas used in MPC closure operations. Thus, "nitrogen or other inert gas" is changed to "helium" in the sentence describing how residual moisture removal is aided. (3) The insertion of inert gas to aid in removing residual moisture had been limited to a maximum PWR Basket pressure of 15 psig. Based on design operating pressure differences between the PWR Basket and the MPC, the MPC maximum pressure will be limited to 75 psig. (4) The acronym "SFP" is spelled out, and the description of the drain line discharge location now includes the option for "other appropriate location." This change has no impact on safety, since radiological and other operational controls are unaffected by where the discharge is directed. (5) The discussion of vacuum drying and vacuum drying system discharge that had been in this paragraph is revised and moved to the following paragraph, which deals with moisture removal by both the vacuum drying method and the added option of the helium recirculation method.
	In the thirteenth paragraph, the discussion of the analysis of maximum fuel cladding temperatures during the vacuum drying process is deleted, since this information is

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	detailed in Section 4.2.6.1 and the Trojan ISFSI Technical Specification Bases Section 3.1.2. The results of the fuel cladding temperature analysis during moisture removal operations are summarized in Table 4.2-12. Replacing this information is added text formerly contained in the previous paragraph describing the removal of moisture from the MPC cavity and the direction of "MPC cavity gas" discharge to a suitable filtration system. The helium recirculation method of moisture removal is added to the discussion as an alternative to the vacuum drying method.
	The helium backfill specified in the fourteenth paragraph for the MPC represents a change from that specified previously for the PWR Basket. Specifically, the sealed MPC is backfilled with 99.995 percent helium to ≥29.3 psig and ≤33.3 psig at a reference temperature of 70°F, as opposed to the PWR Basket specifications of 99.999 percent helium to 14.5 +0/-0.5 psia. These changes reflect the design differences between the MPC and PWR Basket. Also, the last sentence in this paragraph is revised to show that the helium backfill system will be used to regulate MPC pressure, as opposed to the vacuum drying system that was used to regulate PWR Basket pressure. Finally, a reference to "vacuum drying" is changed to "drying" to reflect the helium recirculation option added under the Holtec design as an alternative to the vacuum drying method for drying the MPC internal cavity.
	The fifteenth paragraph is replaced with two paragraphs. The first paragraph provides a description of the MPC vent and drain port cover plate and closure ring welds, weld examinations, and leak testing that replaces the previous description of the PWR Basket penetration cover plate welds and weld examinations. A new paragraph is added that describes the installation and purpose of the Transfer Cask top lid. The last sentence describing movement of the loaded and sealed MPC to the Concrete Cask is revised editorially for clarification.
	Several changes are made to the order of Concrete Cask loading activities that are described in the sixteenth paragraph. These changes affect the order of activities immediately following lowering of the MPC into the Concrete Cask, and are made for ALARA considerations with respect to the Holtec design. Furthermore, this paragraph is revised to state that the MPC lifting slings are lowered onto the MPC lid after the loaded MPC is fully resting on the bottom of the Concrete Cask, and the lifting slings are removed together with the MPC lift cleats following installation of the Concrete Cask shield ring. This represents a change, in that with the PWR Basket, the PWR Basket lifting slings were removed with the aid of an extension device immediately after the PWR Basket was placed on the bottom of the Concrete

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Cask (ceramic tiles), and the PWR Basket hoist rings (equivalent to the lifting cleats for the MPC) were removed following installation of the Concrete Cask shield ring. Considering the design of the MPC lid and lift cleats, this change maintains ALARA and occupational safety benefits by combining the removal of the MPC lifting slings and MPC lift cleats, as well as the installation of threaded inserts in the empty holes in the MPC lid where the MPC lift cleats were attached, after installation of the Concrete Cask shield ring.

Other editorial changes are made to the sixteenth paragraph, including replacing Transfer Cask "shield door" with "bottom door" and "lifting rings" with "lift cleats" to reflect Holtec design and terminology. Also, the description of the second check for potential MPC contamination is revised editorially to clarify that this is an indirect check of the MPC by surveying the Transfer Cask internal surface. This change is editorial in nature and does not impact the performance of this additional check for MPC contamination. Minor editorial changes are made to the seventeenth paragraph that include revising verb tenses and sentence structure for clarification, and adding a reference to 10 CFR 72.104 for completeness.

Minor editorial changes are made to the eighteenth paragraph. These changes include adding an introductory phrase to the second sentence to clarify that although earlier in the loading process there are conditions that could require the MPC to be returned to the Spent Fuel Pool, at this point in the loading sequence, those conditions are no longer applicable. Also, the last sentence is eliminated since the design of the MPC is such that an Overpack is not necessary.

The remaining paragraphs address the contingency unloading of the MPC back into the Spent Fuel Pool. A new Section 5.1.1.3, "MPC Contingency Unloading Operations," is added to highlight and set apart this discussion from the previous discussion of MPC loading activities. The paragraphs in this new section follow closely the content and format of the paragraphs as they existed prior to creation of the new section. However, much of the description is changed as necessary to reflect the Holtec design of the Transfer Cask, MPC, and associated components, as follows.

The nineteenth paragraph, now the first paragraph under the new Section 5.1.1.3, is revised editorially to indicate some examples of conditions that would require contingency unloading, and clarify at what point the need for contingency unloading would be required.

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	The twentieth paragraph, is revised such that the discussion of initial unloading up to the first step is maintained in the paragraph and revised to reflect the Holtec MPC, Transfer Cask, and associated component design and terminology. The remaining discussion of sampling and purging the MPC (previously the PWR Basket) cavity is moved to the following paragraph. As indicated above, the twenty-first paragraph, now the third paragraph under the new Section 5.1.1.3, is revised to include the discussion of sampling and purging the MPC cavity that had been in the previous paragraph. This discussion is changed to reflect the Holtec design. For example, unlike the PWR Basket design, the design of the MPC closure incorporates a "closure ring," and thus a discussion of removal of the closure ring to allow for contingency unloading is added. Similarly, the discussion of filling and cooling the MPC contents that was in this section is revised as necessary to reflect the Holtec design and associated procedures to implement this design. The last portion of this paragraph regarding controls of injection flow rate is revised to eliminate unnecessary detail, especially in light of the fact that the reflooding flow rate is specific to the contents of each MPC, and thus will be controlled using approved procedures. The twenty-second paragraph, now the fourth paragraph under the new Section 5.1.1.3, is revised to reflect the new Holtec design. Specifically, specification of the vacuum drying system as the system to be used to remove water from the MPC is eliminated, and the amount of water to be removed to allow cutting of the closure welds is revised to accommodate the Holtec design. In addition, the discussion of weld cutting is revised to reflect the MPC closure design as opposed to the PWR Basket closure design. The discussion at the end of this paragraph of contingency cooling during weld cutting operations is eliminated, since cooling of the MPC cavity is addressed in the previous paragraph. The twenty-third and last paragraph, now the fifth paragraph under the new Section 5.1.1.3, is also revised to reflect the Holtec design (e.g., MPC lid retention system, annulus seal versus radiation shims, etc.) as described previously. This paragraph is also revised editorially to clarify that the gap flushing system is placed in service prior to placing the Transfer Cask on the impact limiter at the bottom of the Cask Loading Pit.

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5.1.1.3	With the addition of a new Section 5.1.1.3 as discussed above, this section is renumbered as 5.1.1.4. In the first paragraph, reference to "PWR Basket" is changed to "MPC" as described previously. Also, the reference to Section 5.2.1.1.7 is changed to Section 5.2.1.1.8 to reflect section renumbering as described below for Section 5.2.1.1.7. Editorial changes are made to the fourth sentence to enhance punctuation and grammar. The first sentence of the second paragraph is revised to reflect changes to what constitutes the "startup test" (see description of test changes below for Section 9.2.3.2). This relates to similar changes to the last sentence of this section, which specifies when a loaded Concrete Cask is considered to be "in service." To reflect the other various tests that need to be completed prior to the Concrete Cask being placed in service, the reference to "startup test" in this last sentence is changed to "required testing." An additional editorial change is made in the second paragraph, changing "which" to "that" for grammatical correctness. Similarly, center-to-center "spacings" in the third sentence is changed to "spacing."
5.1.1.4	With the addition of a new Section 5.1.1.3 as discussed above, this section is renumbered as 5.1.1.5. An editorial change is made to correct a reference to "(r)ecommended…activities… required by the Technical Specifications." Specifically, "Recommended" is replaced by "Certain." A clarifying sentence is added to indicate the minor nature of ongoing activities associated with maintaining the ISFSI. Other clarifying changes are made to the locations of the loaded Concrete Casks on the ISFSI Storage Pad to be consistent with the Trojan ISFSI layout as described in the Trojan ISFSI technical specifications. A reference is added to Figure 7.3-1 that provides a pictorial description of the Concrete Casks' positions on the Trojan ISFSI Storage Pad.
5.1.1.5	With the addition of a new Section 5.1.1.3 as discussed above, this section is renumbered as 5.1.1.6. A grammatical error in the first sentence is corrected, replacing "are" with "is."

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Section(s) Affected	Description of and Reason for Change(s)
	The description of recovery from a leaking PWR Basket by use of a Basket Overpack has been eliminated to reflect the use of Holtec's MPC in lieu of the PWR Basket. This reflects the fact that leakage of a welded MPC has been shown not to be credible, such that an overpack contingency is not required.
5.1.1.6	With the addition of a new Section 5.1.1.3 as discussed above, this section is renumbered as 5.1.1.7. References related to Shipping Casks are changed to reflect the use of and terminology associated with the HI-STAR 100 Transport Cask." References to "PWR Basket" are changed to "MPC" as described previously. A reference to "high level" is changed editorially to "high-level." The description of Basket Overpack removal has been eliminated to reflect the use of Holtec's MPC in lieu of the PWR Basket, as described previously.
5.1.2	References to "PWR Basket" are changed to "MPC," and reference to "Shipping Cask" is changed to "Transport Cask," as described previously. Figure 5.1-2 is deleted since, as described above, a Basket Overpack is no longer applicable to the Trojan Storage System. The summary descriptions of the listed figures are changed to reflect the elimination of estimated completion times from the figures. A new sentence is added at the end of this section that indicates the basis for their elimination, which is that the completion times of the significant activities are already cited in Figure 7.4-3. The added sentence includes a reference to Figure 7.4-3.
5.1.3.1	This section is revised to reflect a change resulting from the re-analysis of criticality to account for the Holtec design. Specifically, unlike the earlier analysis, the criticality analysis now takes credit for the use of Boral neutron absorbing plates affixed to the fuel storage cell walls to maintain subcriticality.
5.1.3.4	The function description for Item 2 of the table is revised to replace a reference to "PWR Basket" with "MPC" as described previously. Also, nitrogen is eliminated from the list of parameters that pressure and vacuum gauges measure since nitrogen is not intended to be used during MPC closure and/or Trojan ISFSI storage operations. Clarification is added to Item 4 of the table to more specifically detail the function of temperature monitoring devices used on the Concrete Casks air outlets and similar devices used during MPC loading.

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Section(s) Affected	Description of and Reason for Change(s)
5.1.3.5	Characterization of inspection and surveillance activities described in the technical specifications is changed from "recommended" to "required." Reference to "site" procedures is changed to "approved" procedures to reflect the possibility that vendor procedures may be used as appropriate, and that such vendor procedures will be reviewed and approved by Portland General Electric Company prior to use.
5.1.3.6	Reference to "PWR Basket" is changed to "MPC" as described previously. To more accurately describe the impact of postulated drops, "accelerations" is changed to "decelerations." Another editorial change is made to eliminate the initial capitalization from "Regulatory."
5.2.1	Reference to "PWR Basket" is changed to "MPC" as described previously. Conforming changes are made to references to other sections that have been renumbered as part of this revision. Specifically, as described above, the reference to "Sections 5.1.1.1 through 5.1.1.6" is changed to "Sections 5.1.1.1 through 5.1.1.7 to reflect the addition of a new Section 5.1.1.3. Similarly, reference to "Sections 5.2.1.1.1 through 5.2.1.1.8" is changed to "Sections 5.2.1.1.1 through 5.2.1.1.9" to reflect a new Section 5.2.1.1.5. Finally, an editorial change is made to specifically refer to the "Spent Fuel Pool" in a form consistent with the remainder of the SAR.
5.2.1.1	"Vacuum drying system" is changed to "moisture removal system" as described previously. The helium backfill system, that performs the backfill function under the Holtec design that formerly had been incorporated into the vacuum drying system design functions, is added to the list of systems/components that are used to facilitate MPC loading. For clarification, the "welding system" is changed to "automated welding system," and the Transfer Station is added to the list of systems/components that are used to facilitate MPC loading. Reference to off-site "shipping" activities is changed to "transport" activities, and reference to an "Overpack" is eliminated as described previously.
5.2.1.1.1	References to "PWR Basket" are changed to "MPC" as described previously. The description in this section of the Transfer Cask is revised to reflect the design, applicable design codes and standards, and terminology associated with the Holtec-designed Transfer Cask that is used to support movement of the MPC. These

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	changes replace similar information that had been applicable to the Transfer Cask designed by BNFL Fuel Solutions to be used with the PWR Basket. Editorial enhancements are made to this section for readability, and to clarify use of the Transfer Cask both in the Fuel Building and at the ISFSI Transfer Station.
5.2.1.1.2	A clarifying sentence is added at the end of this section to specify the status of the Transfer Cask Lifting Yoke as a special lifting device per ANSI N14.6.
5.2.1.1.3	References to "PWR Basket" are changed to "MPC" as described previously. Reference to the liquid used in the gap flushing system is changed from "filtered borated water" to "filtered Spent Fuel Pool water" as described previously. Minor editorial enhancements are made to this section for readability, and to clarify the function of the gap flushing system.
5.2.1.1.4	The discussion of vacuum drying is revised to incorporate a description of the added option of the helium recirculation method to remove residual moisture from the MPC. Thus, the title is revised by changing "vacuum drying" to "moisture removal." The vacuum drying system design as changed under Holtec will no longer be an integral unit mounted on a skid, but rather a component-based system; thus, "skid-mounted" and "located on the vacuum skid" are eliminated. References to "PWR Basket" are changed to "MPC" as described previously. Associated changes are made to reflect the design differences between the PWR Basket and the MPC. For example, reference to the "shield and structural lids" that were applicable to the PWR Basket is replaced with "MPC lid" to reflect the design of the MPC. Since helium circulation is an efficient heat-removal mechanism for the spent fuel inside the MPC, the new helium recirculation system replaces the vacuum drying system as the preferred method of cooling the spent fuel once the MPC interior has been drained of water. This section has been revised to reflect this change.

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Section(s) Affected	Description of and Reason for Change(s)
5.2.1.1.5	A new Section 5.2.1.1.5 is added to provide a description of the helium backfill system, which performs the backfill function under the Holtec design that formerly had been incorporated into the vacuum drying system design functions. The description of the welding system that had been in this section is renumbered as Section 5.2.1.1.6. The "semi-automatic welding system" is changed to "automated welding system" for consistency of terminology throughout the SAR. Reference to "PWR Basket" is changed to "MPC," and reference to the "Basket Overpack" is eliminated as described previously.
5.2.1.1.6	With the addition of a new Section 5.2.1.1.5 as discussed above, this section is renumbered as 5.2.1.1.7. Reference to "PWR Basket" is changed to "MPC" as described previously. The first sentence is revised to allow for ALARA considerations when determining at what point the Transfer Cask bottom door hydraulic cylinders will be installed. The second sentence is rephrased to enhance readability.
5.2.1.1.7	With the addition of a new Section 5.2.1.1.5 as discussed above, this section is renumbered as 5.2.1.1.8. The first sentence is revised to reflect the Holtec-designed Transfer Cask, which utilizes four hydraulic cylinders to open the bottom shield doors. To eliminate unnecessary detail, specification of the number of hydraulic cylinders is removed. Reference to the PWR Basket Overpack has been eliminated to reflect the use of Holtec's MPC in lieu of the PWR Basket. The design of the MPC is such that an overpack is not required. Words are added to reflect the use of the air pad system to move the loaded Concrete Cask to the Transfer Station for transfer of the MPC to a Transport Cask for off-site shipping. An editorial change to the first sentence replaces "...to storage location..." to "...to its storage location...." The third sentence of the first paragraph is revised to clarify that there are four air pads and one or more air compressors.

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5.2.1.1.8	With the addition of a new Section 5.2.1.1.5 as discussed above, this section is renumbered as 5.2.1.1.9. References to "PWR Basket" are changed to "MPC" as described previously. Reference to the PWR Basket Overpack is eliminated as described previously. Reference to "Shipping Cask" is changed to "Transport Cask" as described previously. The second paragraph is revised to clarify the purpose of the lateral frames. References to the Transfer Cask doors are changed to "Transfer Cask bottom doors," and references to the Transfer Cask bottom door "locking bolts" are changed to "mechanical stops." These changes reflect terminology associated with the Holtec-designed Transfer Cask and are made to be consistent throughout the SAR. A reference in the third paragraph to the "cask lid" is changed to clarify that the subject cask is the "Concrete Cask." Discussion of the removal of the Concrete Cask shield ring is moved such that the shield ring is not removed until after the MPC rigging hardware and slings are attached. This change incorporates ALARA efforts, consistent with a similar change to the sixteenth paragraph of Section 5.1.1.2. References to the "structural lid" in the third and fourth paragraphs are changed to the "MPC lid" since there is no structural lid under the Holtec design. The first sentence of the fifth paragraph is revised editorially to clarify that the MPC is raised "into the Transfer Cask…" as opposed to "in the Transfer Cask…." The following sentence is revised to clarify that the Mobile Crane load cell is used to prevent the Mobile Crane from raising the MPC higher than the top of the Transfer Cask by stopping the crane when the Transfer Cask lid is impacted by the MPC. In addition to conforming changes described above, minor editorial changes are made to the sixth and seventh paragraphs to clarify and enhance readability.
5.2.1.2	References to "PWR Basket" are changed to "MPC" as described previously. Changes are made to the first paragraph to reflect the design of the Holtec-designed Transfer Cask top lid and MPC lid retention system as opposed to that of the PWR

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	Basket and associated Transfer Cask. Specifically, unlike the PWR Basket lid retainer, the MPC lid retention system is not part of the Transfer Cask lid assembly. In addition, this paragraph is revised to clarify the purposes of the Transfer Cask top lid and the MPC lid retention system. In the second paragraph, "Transfer Cask" is inserted before "bottom doors," and reference to the Transfer Cask bottom door locking bolts as "steel pins" is changed to "mechanical stops," to reflect terminology associated with the Holtec-designed Transfer Cask and to be consistent throughout the SAR. In addition, a reference to "Section 8.2.13.3.2" is changed to "Section 8.2.13.3.3" to reflect renumbering in Section 8.2.13.3. The last sentence is revised editorially to clarify that the Mobile Crane load cell is used to prevent the Mobile Crane from raising the MPC higher than the top of the Transfer Cask by stopping the crane when the Transfer Cask lid is impacted by the MPC.
5.2.2	References to "PWR Basket" are changed to "MPC" as described previously. In addition, a reference to "Section 5.1.1.6" is changed to "Section 5.1.1.7" to reflect the addition of a new Section 5.1.1.3 as described above.
5.2.2.2	References to "PWR Basket" are changed to "MPC" as described previously. An unnecessary descriptor ("well") is eliminated from the third sentence, and the title of Section 8 in the last sentence is corrected to read "Accident Analysis."
5.3.2	An editorial change corrects improper punctuation.
5.4.1	The last sentence is revised editorially to clarify the purpose of the air outlet temperature monitoring devices.
5.5	This section is unchanged, with the exception of renumbering as Section 5.4.3 to more appropriately place it under the category of support system operation.
5.6	This section is unchanged, with the exception of renumbering as Section 5.4.4 to more appropriately place it under the category of support system operation.
5.7	This section is renumbered as Section 5.5 to reflect the section renumbering discussed above for Sections 5.5 and 5.6. Reference 1 is revised to incorporate the Holtec time-to-boil calculation methodology that has been performed based on use of the Holtec MPC and on the revised design basis decay heat load assumption of 17.4 kWt.

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Section(s) Affected	Description of and Reason for Change(s)
Figure 5.1-1	References to "PWR Basket" are changed to "MPC" as described previously. The estimated time durations are removed since the durations for significant activities are already estimated and documented in Table 7.4-3. "Cask Load Pit" is changed to "Cask Loading Pit" for consistency of terminology, and reference to "Vacuum Dry" is changed to "Dry" to reflect the added helium recirculation method for removing residual moisture from the MPC cavity. The first block under "Prepare Equipment" is revised to eliminate "on Spent Fuel Pool Floor." This change eliminates potential misinterpretation that equipment would be staged on the bottom of the Spent Fuel Pool. In any case, equipment is staged as necessary to prepare for and complete cask loading activities. The list of activities in the last block in the middle column is reordered to represent the actual order of these MPC closure activities, and helium leak rate testing is added for completeness.
Figure 5.1-2	This figure is deleted since leakage of an MPC is not considered credible, and thus an overpack is not required.
Figure 5.1-3	References to "PWR Basket" are changed to "MPC" as described previously. The estimated time durations are removed since the durations for significant activities are already estimated and documented in Table 7.4-3. References to "Shipping Cask" are changed to "Transport Cask" as described previously. An editorial correction is made to the fourth step of the process to eliminate the "leaking" scenario. A reference to "Vacuum Dry" is changed to "Dry" to allow for other options (e.g., helium recirculation) for removing residual moisture from the Transport Cask cavity.
Figure 5.1-4	References to "PWR Basket" are changed to "MPC" as described previously. Associated changes are made to reflect the differences in design of the MPC and PWR Basket (e.g., the shield and structural lids for the PWR Basket are replaced for the MPC by the MPC lid). The second step of the contingency unloading process figure is revised to replace "Connect VDS" with "Cool As Necessary" to more broadly and appropriately characterize a primary activity (i.e., ensuring cooling capability is maintained) during MPC preparation. The estimated time durations are removed since the durations for significant activities are already estimated and documented in Table 7.4-3.

CHAPTER 6

Section(s) Affected	Description of and Reason for Change(s)
6.1	Reference to "PWR Basket" is changed to "MPC" to reflect updates in component and system terminology. The MPC "lid" is specified in a change to the second sentence of this section to emphasize that with operation of the gap flush system, except for the MPC lid, significant contamination of the MPC external surface is not anticipated. As an editorial enhancement for readability, the verb tense "would" is changed to "will" in this and the next sentence. In the last sentence of the first paragraph, reference to "vacuum dry" is changed to "remove the moisture from" to reflect the addition of the helium recirculation method as an option for achieving required MPC cavity dryness. In addition, "pump down" is changed to "blow down" to reflect the fact that under the new design, draindown of the MPC will no longer utilize a pump, but rather will be accomplished by introducing pressurized inert gas to "blow" the water out. Finally, "filter or capture" is changed to "filter" since the systems used at TNP are designed to filter, rather than capture, gaseous waste.
6.2	References to "PWR Basket" are changed to "MPC" as described previously. As described previously, reference to "vacuum dried" or "vacuum drying" is changed to "dried" or "drying," as appropriate. In the last sentence of the first paragraph, "filter or capture" is changed to "filter" since the systems used at TNP are designed to filter, rather than capture, gaseous waste. A similar change is made to the last sentence of the last paragraph of this section. Several editorial changes are made, including changing verb tenses in the last sentence for readability.
6.3, 6.4	References to "PWR Basket" are changed to "MPC" as described previously. The MPC "lid" is specified to emphasize that with operation of the gap flush system, except for the MPC lid, significant contamination of the MPC external surfaces is not anticipated. As described previously, reference to "vacuum dried" or "vacuum drying" is changed to "dried" or "drying," as appropriate. In Section 6.4, reference to the specific tasks of MPC "pump down and vacuum drying" is changed to the more general activities associated with MPC "closure."

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	This general description is more appropriate since this sentence is specifically concerned with how any solid waste that is generated during MPC closure will be processed. This change eliminates the need to correct the reference in this phrase to "pump down," which is changed to "blow down," and to "vacuum drying" that is changed to "drying" as described previously.
6.5	References to "PWR Basket" and "Basket" are changed to "MPC" as described previously. A grammatical error is corrected in the first sentence.

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Section(s) Affected	Description of and Reason for Change(s)
7.1.3	References to "PWR Basket" are changed to "MPC" to reflect Holtec component and system design and terminology. Reflecting the adoption of the Holtec designs into the Trojan Storage System, a conforming change is made to Step 5 of the list in this section describing how personnel radiation exposure is minimized. Specifically, reference to the "shielding" lid is eliminated since this applied to the PWR Basket, and does not apply to the MPC. An editorial change is made to Step 4 in this section, such that the water specified for use in the gap flush system is changed from "filtered, borated water" to "filtered water." This change is made to clarify that the gap flush water is not separately put through a boration process. Rather, the borated Spent Fuel Pool water is used, and is filtered such that contamination is removed without removing the boron.
7.2.1	This section is rewritten to focus specifically on defining the design basis fuel for the Trojan Storage System, and to present a summary of the design basis fuel in a clear, concise manner. The revisions to this section reflect an update to the bounding Trojan spent fuel characteristics, which includes a new design basis combination of spent fuel burnup, cooling time, and enrichment that conservatively bounds the Trojan spent fuel inventory. This updated bounding source term is used in the shielding analysis presented in Section 7.3.2. This section also is changed to reflect the fact that the radiation source data for the shielding analysis in the Trojan ISFSI SAR Section 7.3.2 no longer comes from the Office of Civilian Radioactive Waste Management (OCRWM) database. For the revised shielding analysis presented in Section 7.3.2, the radiation source data now is calculated using the same methods described in the approved HI-STORM 100 System SAR. The last paragraph of this section is added to summarize the calculation methodology for determining the radiation source data.
7.2.1.1	As with Section 7.2.1, this section is rewritten to focus specifically on presenting the gamma source terms that were calculated for the Trojan Storage System shielding analysis. Discussion of modeling used in the shielding analysis is removed from this section, since Section 7.3.2 is dedicated to presenting the Trojan Storage System shielding analysis modeling methodology. As stated above, instead of coming from the OCRWM database, the gamma source terms presented in this section were calculated using the same methods described in the approved HI STORM 100 System SAR, based on the design basis fuel defined

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	in the rewritten Section 7.2.1 as described above. Therefore, references to OCRWM data are eliminated.
7.2.1.2	Similar to the rewrite of Section 7.2.1.1, this section is rewritten to focus specifically on presenting the neutron source terms that were calculated for the Trojan Storage System shielding analysis. As stated above, instead of coming from the OCRWM database, the neutron source terms presented in this section were calculated using the same methods described in the approved HI STORM 100 System SAR, based on the design basis fuel defined in the rewritten Section 7.2.1 as described above. Therefore, references to OCRWM data are eliminated. For consistency, a reference in the first paragraph to "Cm^{244}" is changed to "Cm-244." Clarification is added to the next-to-last paragraph to specify how increases to the neutron source strength are accounted for in the neutron shielding analysis. Editorial changes are made to this and the last paragraph to replace the symbols "%" and "~" with "percent" and "approximately," respectively.
7.2.1.3	Similar to the rewrite of Section 7.2.1.2, this section is rewritten to focus specifically on presenting the non-fuel gamma source terms that were calculated for the Trojan Storage System shielding analysis. As stated above, instead of coming from the OCRWM database, the gamma source terms presented in this section were calculated using the same methods described in the approved HI STORM 100 System SAR, based on the design basis fuel defined in the rewritten Section 7.2.1 as described above. Therefore, references to OCRWM data are eliminated.
7.2.1.4	This section was issued as a deleted section in Revision 0 of the ISFSI SAR because prior to issuance of the approved ISFSI SAR, it was determined that waste classified as "greater than Class C" would not be stored in the Trojan ISFSI. Since there is no need to preserve the section numbering here, this "placeholder" section is eliminated to enhance readability.
7.2.1.5	This section is renumbered as 7.2.1.4 to reflect the deletion of the previous Section 7.2.1.4 as described above. This section is also revised editorially to clarify the fuel debris source term considered in the shielding analysis, especially with consideration for consistency with other SAR sections. Specifically, the first sentence is deleted, and a portion of the deleted sentence is incorporated into the next sentence.

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Section(s) Affected	Description of and Reason for Change(s)
7.2.1.6	This section is renumbered as 7.2.1.5 to reflect the deletion of the previous Section 7.2.1.4 as described above. The introductory phrase, "In addition to failed fuel," is eliminated since this phrase was out of context and added no value. The elimination of this phrase enhances readability.
7.2.2	This section is expounded upon and reorganized in order to enhance readability and understanding of the different potential sources of radioactivity associated with the Trojan Storage System. The reorganization involves the addition of three new subsections, Sections 7.2.2.1, 7.2.2.2, and 7.2.2.3, as discussed further below. References to "PWR Basket" are changed to "MPC" as described previously. The first two paragraphs in Section 7.2.2 remain in this section. The second sentence of the second paragraph is revised to add "storage" operations to the list of operations during which airborne releases to the environment are not expected. Two new sentences are added that reference analyses that have been performed, even in light of the design of the Trojan Storage System such that an airborne release is not anticipated, to determine the consequences of postulated effluent releases under off-normal and hypothetical accident conditions. Calculation details with regard to these analyses are provided in proprietary Holtec Report No. HI-2012677, "Trojan ISFSI Site Boundary Confinement Analysis," which is provided concurrently with this enclosure. The last two paragraphs of Section 7.2.2 are placed under the new subsection numbering 7.2.2.1. As with the paragraphs remaining in Section 7.2.2, references to "PWR Basket" are changed to "MPC" as described previously. An editorial change is made to the second sentence of the first paragraph, now in new Section 7.2.2.1, such that the water specified for use in the gap flush system is changed from "filtered, borated water" to "filtered water." This change is made to clarify that the gap flush water is not separately put through a boration process. Rather, the borated Spent Fuel Pool water is used, and is filtered such that contamination is removed without removing the boron. The reference to "Chapter 8" in the last sentence of the first paragraph is changed to "Section 8.1.3" to provide a more specific reference to the analysis of a postulated release of radioactive particulates from the MPC exterior surface.

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	An introductory phrase is added at the beginning of the first sentence of the second paragraph to enhance readability. The word "normal" is deleted from the second sentence in this paragraph since postulated MPC leakage is not considered to be a normal condition. The third sentence is revised to reflect the fact that there are more than one scenarios postulated and analyzed for dose consequences. The new Section 7.2.2.2 is added to present a summary of the releasable source term from isotopes other than Co-60 that is contained in the Trojan MPC. The new Section 7.2.2.3 is added to present a summary of the releasable source term due to Co-60 that is contained in the Trojan MPC.
7.3.1	References to "PWR Basket" are changed to "MPC" as described previously. A reference number is added in parentheses at the end of the fourth paragraph for completeness. In Item 6, "as necessary" is added to clarify that decontamination is only performed if necessary.
7.3.2	References to "PWR Basket" are changed to "MPC" as described previously. Associated changes are made to reflect the design of the MPC lid, which is different from that of the PWR Basket. Specifically, the "PWR Basket structural lid" is changed to the "MPC lid," and the maximum external dose rate at the Concrete Cask top is changed from 250 mrem/hr to 300 mrem/hr to reflect the reduced shielding provided by the MPC lid as compared to that provided by the PWR Basket shield and structural lids. Characterization of the use of temporary shielding to allow limited access to the MPC top area is changed from "will" to "may," since the use of temporary shielding is determined by ALARA considerations. Editorial changes to the second sentence of the first paragraph are made to clarify that the values given for Concrete Cask average dose rates at the top and sides are not design basis values, but rather result from the Trojan Storage System design features that specifically are incorporated to conform with the dose rate limits at the Controlled Area boundary pursuant to 10 CFR 72.104, 10 CFR 72.106, and 10 CFR 20. Changes to the last sentence of the first paragraph reflect the change in the Controlled Area boundary from 325 meters to 225 meters based on the new shielding analysis contained in Section 7.3.2, and on new accident dose calculations in Chapter 8. These analyses are specific to the Holtec MPC design and bounding Trojan spent nuclear fuel characteristics (i.e., design basis combination of burnup, 42,000 MWD/MTU, and cooling time, 9 years) and loading configurations. See ISFSI SAR Section 7.6.2, which presents the estimated dose results based on the revised shielding analysis, and Section 8.2.4.3 and Table 8.2-2 for additional details

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	on the reduction in the Trojan ISFSI Controlled Area boundary from 325 meters to 225 meters. A new paragraph is added to this section to discuss the additional conservatism that exists in calculated direct dose estimates due to natural physical features associated with the surrounding terrain. This is provided for information only, as the shielding and dose analyses presented in the Trojan ISFSI SAR do not take any credit for these natural features.
7.3.2.1	The description in this section of the radial and axial shielding configurations is revised to reflect design differences between the PWR Basket and the MPC, and between the TranStor™ Transfer Cask that would have been used to move the PWR Basket, and the Holtec-designed Transfer Cask that will be used to move the MPC. Descriptions of component thicknesses and material make-up are revised to conform to the new Holtec designs that are being incorporated into the Trojan Storage System. For example, changes to the second paragraph are made to reflect the MPC single lid design, as opposed to the PWR Basket that had a shield lid and a separate structural lid. Additional detail is provided in this revision with respect to component dimensions since this information directly influences the shielding models and analysis results. Replacing a similar paragraph for the previous TranStor™ Transfer Cask, a new paragraph is added that describes in detail the material and dimensional makeup of the Holtec Transfer Cask pertinent to the shielding analysis modeling. The shielding configuration description in this section is also revised to reflect differences in the shielding analysis modeling methodology and assumptions used for the MPC, as compared to those that accompanied use of the PWR Basket. Additional details with regards to these differences are provided below for Section 7.3.2.2. The shielding modeling methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012749, "Shielding Evaluation for the Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
7.3.2.2	As discussed above for Section 7.3.2.1, the shielding configuration description in this section is revised to reflect differences in the shielding analysis modeling methodology and assumptions used for the MPC, as compared to those that accompanied use of the PWR Basket. Specifically, for the PWR Basket and TranStor™ Transfer Cask, a combination of computer codes and manual calculations were used for radiation shielding analyses, including the QAD-CGGP (three-dimensional point-kernel code) for gamma dose rate calculations and Monte

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	Carlo N-Particle MCNP shielding code for neutron dose rate calculations. For the shielding analyses performed for the Trojan-specific Holtec-designed Transfer Cask and the MPC in both the Transfer Cask and the Concrete Cask, the fully three-dimensional continuous energy, coupled neutron-gamma MCNP Version 4A was used for all shielding analyses. The dose rate-versus-distance analysis methodology is similar to that described in the HI-STORM 100 System FSAR. The shielding modeling methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012749, "Shielding Evaluation for the Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
7.3.2.2.1, 7.3.2.2.2	These sections are eliminated, and the pertinent information as revised to be applicable to the Holtec designs (MPC and Transfer Cask) and the updated shielding analysis methodology is incorporated into Section 7.3.2.2.
7.3.3	References to "PWR Basket" are changed to "MPC" as described previously. An editorial change is made to the last sentence of the third paragraph, adding the modifier "also" to enhance readability and flow.
7.4	The first sentence in the second paragraph is revised editorially to eliminate the word "cycle" that had been inserted inadvertently in the original Trojan ISFSI SAR revision. Other editorial changes are made to the last sentence of this paragraph to enhance readability and conceptual flow, especially with regard to the source of the table embedded in the text. The table embedded in the text is revised to reflect the results of the revised shielding analysis, and the resultant changes in the calculated occupational dose associated with loading the 34 casks. In the third paragraph, the first sentence is revised to reflect changes to Table 7.4-3 that, among other changes, now includes dose rate estimates associated with maintenance activities. Based on the updated shielding analysis results, the conservative collective dose estimate for periodic inspection, surveillance, and (now) maintenance activities is reduced from 5 rem/yr to 1.1 rem/yr. The second sentence of this paragraph is revised editorially to clarify that the inspection and surveillance activities considered in estimating this dose do not include the periodic Concrete Cask air outlet temperature reading, since this temperature reading is performed remotely, and thus its performance does not involve any significant dose from ISFSI storage operations.

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	The second sentence of the third paragraph also reflects a change to the requirement for a "daily visual inspection of each stored Concrete Cask," which is revised to a "weekly visual inspection." Of note, the requirement for twice a day temperature readings of the air outlet temperature of each Concrete Cask is also revised to daily temperature readings, but since dose rate consideration of the periodic temperature readings is eliminated as discussed above, this change is not reflected in this section. These changes reflect similar changes to the Trojan ISFSI technical specifications that are made concurrently; the basis for these changes are provided as part of the description of changes for the Trojan ISFSI technical specifications. The last sentence of the third paragraph is revised editorially, adding "and ISFSI" to the end of the sentence to include in this discussion the dose from a fully loaded ISFSI Storage Pad, as well as an individual fully loaded Concrete Cask.
7.5.3.2.2	An editorial change is made to clarify references to the "access Controlled Area" as the area that has the same boundaries as the Restricted Area as defined in 10 CFR 20. The clarification changes this reference to "controlled access area," differentiating it from the "Controlled Area Boundary" that is established pursuant to 10 CFR 72.3, 10 CFR 72.104 and 10 CFR 72.106 for satisfying radiological dose requirements.
7.5.3.2.3	References to "PWR Basket" are changed to "MPC" as described previously. The first sentence is revised editorially to clarify that it is the "accessible portions" of the MPC external surface, as opposed to the entire external surface, that are checked for loose surface contamination before moving the loaded Concrete Cask to the Storage Pad. This editorial change ensures that interpretation of this section is consistent with the description of loading activities provided in SAR Section 5.1.1.2.
7.5.3.2.4	Reference to "PWR Basket" is changed to "MPC" as described previously.
7.5.3.2.6	The first sentence is revised to reflect a change in dosimetry requirements for personnel accessing radiologically controlled areas (RCAs) that do not contain significant radiation levels. This change reflects the significantly reduced source terms at the Trojan facility, such that in many areas radiation levels are reduced to a level that allows personnel entry without dosimetry per 10 CFR 20, Subpart F, Section 1502. The Trojan Radiation Protection Program ensures continuing surveys and controls to verify area that radiological conditions remain acceptable for personnel access without dosimetry. Dosimetry will continue to be required in those RCAs that, due to levels of radiation and radioactive material, would require

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	monitoring. This change has been evaluated at TNP and the Trojan ISFSI pursuant to 10 CFR 50.59 and 10 CFR 72.48 and determined to not require prior NRC approval. This change is provided in this draft Revision 2 since it is an approved change to the ISFSI SAR and will be incorporated into this ISFSI SAR revision.
7.5.3.3	For completeness and accuracy, "10 CFR 19" is added as a governing requirement for the submittal of individual radiation monitoring reports. This change has been evaluated at TNP and the Trojan ISFSI pursuant to 10 CFR 50.59 and 10 CFR 72.48 and determined to not require prior NRC approval. This change is provided in this draft Revision 2 since it is an approved change to the ISFSI SAR and will be incorporated into this ISFSI SAR revision.
7.6.2	This section is revised to reflect the results of the new shielding analysis and updated analyses of off-normal and hypothetical accident MPC leakage conditions. The total estimated dose to a member of the general public from Trojan ISFSI operations is revised from 8.5 mrem/yr to 23.52 mrem/yr. As detailed in Sections 8.1.4 and 8.2.1, the MPC leakage scenario analyses were originally calculated for the PWR Basket with an occupancy factor of 8760 hours/yr at a distance of 325 meters, and are revised to reflect the MPC design and an occupancy factor of 2080 hours/yr at 150 meters. The revised results of these analyses and of the shielding analyses (as detailed in Section 7.3.2) result in a new Controlled Area Boundary of 225 meters. The change in the occupancy factor upon which the calculated dose is based is consistent with Interim Staff Guidance Document 13 to represent a conservative maximum estimate of a real individual's occupancy time at the Controlled Area Boundary. The maximum effluent contribution for the purposes of complying with the State of Oregon Administrative Rule (OAR) 0345-026-0390(4)(f) was originally calculated for the PWR Basket with an occupancy factor of 2000 hours/yr and a Controlled Area Boundary of 325 meters. Similar to above, the calculation is revised for the MPC, an occupancy factor of 2080 hours/yr, and a new Controlled Area Boundary of 225 meters. The discussion of background dose at the Trojan site is eliminated from this section since this information is not pertinent to the analysis of multiple contribution presented in this section.
7.7	The references for Chapter 7 are completely revised to eliminate references that were applicable to the shielding and dose analyses performed for the TranStor™ Transfer Cask and PWR Basket, since these components are no longer part of the

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	Trojan Storage System. Replacing these references are new references that are applicable to the shielding and dose analyses performed for the Trojan Storage System incorporating the Holtec Transfer Cask and MPC. One reference, the PWR Axial Burnup Power Profile Database, remains applicable in this revision, but is renumbered from Reference 8 to Reference 4.
Table 7.2-1	The 40,000 MWd/MTU, 5-year cooled fuel case and the 45,000 MWd/MTU, 6-year cooled fuel case are replaced with the updated bounding fuel characteristics as discussed in Section 7.2.1. Specifically, the entire Trojan spent fuel inventory is bounded by the 42,000 MWD/MTU burnup, nine-year cooled case, with an initial enrichment of 3.09 wt% U-235. The table is also revised to include isotopes available for release using an approach consistent with NUREG/CR-6487 and NRC Interim Staff Guidance Document No. 5. This table summarizes the discussion provided in Trojan ISFSI SAR Sections 7.2.2.2 and 7.2.2.3.
Table 7.2-2	As discussed previously, the 40,000 MWd/MTU, 5-year cooled fuel case and the 45,000 MWd/MTU, 6-year cooled fuel case are replaced with the updated bounding fuel case in which the entire Trojan spent fuel inventory is bounded by the 42,000 MWD/MTU burnup, nine-year cooled case, with an initial enrichment of 3.09 wt% U-235. This table is further revised to present gamma source term for the updated shielding analysis in both MeV/sec and photons/sec, and to eliminate data for photons with energies below 0.45 MeV and above 3.0 MeV. The basis for only presenting gamma source terms with energies between 0.45 MeV and 3.0 MeV is provided in the first paragraph of Trojan ISFSI SAR Section 7.2.1.1.
Table 7.2-3	As discussed previously, the 40,000 MWd/MTU, 5-year cooled fuel case and the 45,000 MWd/MTU, 6-year cooled fuel case are replaced with the updated bounding fuel case in which the entire Trojan spent fuel inventory is bounded by the 42,000 MWD/MTU burnup, nine-year cooled case, with an initial enrichment of 3.09 wt% U-235. As discussed in Section 7.2.1.2, the information in this table no longer comes from the OCRWM computer database, but rather was calculated using the same methods described in the approved HI STORM 100 System SAR. This table is further revised to present the information in ascending, rather than descending, order of neutron energy ranges, and to eliminate the last column, "Normalized Neutron Source Spectrum Fraction," since increases in the total neutron source strength are now otherwise accounted for in the MCNP calculations.
Table 7.2-5	Consistent with Section 7.2.1.3, the gamma source term for the non-fuel regions no longer comes from the OCRWM computer database, but rather is calculated using the same methods described in the approved HI STORM 100 System SAR. The gamma source strength information that had been provided in this table is replaced

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	with five new tables, Tables 7.2-5 through 7.2-9, that present the non-fuel material mass, scaling factor, and gamma source strength data that were used to calculate the non-fuel gamma source term for the Trojan spent fuel in the MPC.
Table 7.3-1	The values in this table were developed for the PWR Basket, the Transfer Cask that was designed to be used with the PWR Basket, and the Concrete Cask. Thus, this table is revised to reflect the replacement of the PWR Basket and associated Transfer Cask by the MPC and the Transfer Cask designed by Holtec to be used with the MPC.
Table 7.3-2	This table, which had presented elemental densities in units of atoms/barn-cm, is eliminated since Table 7.3-1 already presents elemental densities in pertinent units of gm/cc. A new Table 7.3-2 replaces the eliminated table. The new Table 7.3-2 presents detail dimensions of the six axial subregions that were modeled in the Trojan Storage System shielding calculations. Addition detail of the axial shielding configuration is described in Trojan ISFSI SAR Section 7.3.2.1.
Table 7.3-3	The neutron energy group flux-to-dose conversion factors presented in this table are revised to reflect the use of ANSI/ANS-6.1.1-1977 values in the shielding analysis for the Trojan Storage System incorporating the Holtec designs. The values in this table had been derived for the PWR Basket shielding analysis from another approved source (DLC-23, 1978).
Table 7.3-4	This table is unchanged in content, but the reference document from which the dose conversion factor values are derived is added to the title of this table in parentheses. This addition provides a ready reference to the source document for this table.
Table 7.4-1	This table is revised to reflect the results of the updated Trojan Storage System shielding analysis presented in Trojan ISFSI SAR Section 7.3.2, based on the updated design basis fuel characteristics presented in Section 7.2.1. References to the PWR Basket are changed to MPC as described previously. A new Footnote d is added to clarify that the values given for Concrete Cask average dose rates at the top and sides are not design basis values, but rather result from the Trojan Storage System design features that specifically are incorporated to conform with the dose rate limits at the Controlled Area boundary pursuant to 10 CFR 72.104, 10 CFR 72.106, and 10 CFR 20.

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Table 7.4-3	This table is revised to reflect the results of the updated Trojan Storage System shielding analysis presented in Trojan ISFSI SAR Section 7.3.2, based on the updated design basis fuel characteristics presented in Section 7.2.1. References to "Basket" are changed to "MPC" as described previously. Conforming changes are made to reflect the design of the MPC as opposed to the design of the PWR Basket (e.g., MPC lid replaces the PWR Basket structural and shield lids). In another conforming change, reference to "vacuum dry" is changed to "MPC dry" to reflect the added option of helium recirculation as a method of removing moisture from the MPC. Reference to "Shipping Cask" is changed to "Transport Cask" to be consistent with terminology of the new ISFSI vendor. The exposure times for welding activities are changed to reflect the differences in weld design and procedures associated with the MPC as opposed to those that pertained to the PWR Basket. Changes in the working dose rates and resultant exposures reflect the revised shielding analysis results, as discussed in Trojan ISFSI SAR Section 7.4. The activity descriptions for periodic surveillances and inspections are revised to clarify those activities that will involve personnel exposures from the Trojan ISFSI. For conservatism, added to this table is an entry for regular ISFSI maintenance as discussed above for Section 7.4. The wording in Footnote c is eliminated since this detail is provided in Section 7.4 and is not necessary here; this wording is replaced with new wording applicable to certain values in the table (e.g., maintenance, surveillances, etc.) that represent amounts accumulated in one year, rather than amounts per task/activity. Footnotes d and e are eliminated because the shield lid and structural lid are not applicable to the MPC, and because, consistent with a similar change to Section 7.3.2 (see above for Section 7.3.2), temporary shielding may be used as determined by ALARA considerations.
Figure 7.3-1, Figure 7.3-2, Figure 7.3-5, Figure 7.3-6	These figures depicting the shielding materials and modeling makeup for the PWR Basket (and associated Transfer Cask) shielding analysis are eliminated. Similar figures applicable to use of the MPC in the Trojan Storage System are not added since existing figures in Chapter 4, as well as tables included in this Chapter 7, are adequate in combination with the text description in Section 7.3.2.1 and 7.3.2.2 to described the shielding materials and modeling makeup for the MPC (and associated Transfer Cask) shielding analysis.

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	A new Figure 7.3-1 is added that replaces the previous figure. The new Figure 7.3-1 provides an illustration of the Trojan ISFSI pad configuration as it pertains to the shielding analysis. As described below, Figures 7.3-9 and 7.3-11 are renumbered as Figures 7.3-2 and 7.3-3 to eliminate numerous "intentionally deleted" pages and thus enhance readability.
Figure 7.3-3, Figure 7.3-4, Figure 7.3-7, Figure 7.3-8, Figure 7.3-10	These figures had been intentionally deleted in the original issuance of the Trojan ISFSI SAR, and placeholder pages had been inserted to preserve figure numbering. Due to the excessive number of placeholder pages associated with these deleted figures and other figures that are being deleted in this revision, the placeholder pages are deleted and the remaining four figures are renumbered sequentially. These changes eliminate potential confusion and enhance readability associated with navigating the Chapter 7 figure section.
Figure 7.3-9	As mentioned above, this figure is renumbered as Figure 7.3-2, replacing the previous Figure 7.3-2. The dose rate values incorporated into this figure are revised to reflect the updated shielding analysis results as described in Trojan ISFSI SAR Section 7.3.2.
Figure 7.3-11	As mentioned above, this figure is renumbered as Figure 7.3-3. The component drawings and dose rate values incorporated into this figure are revised to reflect the design of the MPC as opposed to the PWR Basket, and of the Transfer Cask designed by Holtec for use with the MPC as opposed to the Transfer Cask designed for use with the PWR Basket.

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8.0	References to "PWR Basket" are changed to "MPC" to reflect updates in component and system design and terminology associated with the selection of Holtec to complete the Trojan ISFSI Storage System. Reference to "Shipping Cask" is changed to "Transport Cask" to be consistent with terminology of the new ISFSI vendor. Similarly, the Transport Cask reference document that addresses events that could occur after the MPC is loaded is updated to read "...the HI-STAR 100 Transport Cask Safety Analysis Report (Docket 71-9261)..." to reflect the new ISFSI vendor. This document is cited in Reference 4 to this section.
8.1	References to "PWR Basket" are changed to "MPC" as described previously. A conforming change is made in the last paragraph, replacing "PWR Basket internals" with "MPC fuel basket," again to reflect Holtec terminology. Reference to "Shipping Cask" is changed to "Transport Cask" as described previously. Reference to the PWR Basket Overpack has been eliminated to reflect the use of Holtec's MPC in lieu of the PWR Basket. The design of the MPC is such that an overpack is not required. Finally, the last sentence is reworded for clarification; this editorial change does not impact the intent of the sentence.
8.1.1.1	References to "PWR Basket" are changed to "MPC" as described previously.
8.1.1.1.1	References to "PWR Basket" are changed to "MPC" as described previously. The last sentence is reworded to clarify under what circumstances this event is postulated to occur; this editorial change does not impact the intent of the sentence.
8.1.1.1.2	The change to this section reflects that moving the MPC from the Concrete Cask to the Transport Cask is the only activity anticipated at the Transfer Station (i.e., not Concrete Cask loading). Therefore, "MPC handling operations" more accurately characterizes the activity, in addition to Concrete Cask movement on the ISFSI Pad, that would be observed such that the off-normal handling event could be detected.
8.1.1.1.3	The analysis of the effects and consequences of the off-normal handling load is revised to reflect the replacement of the PWR Basket with the MPC for use in the Trojan Storage System. This revision consists of a proof by comparison (of the load imparted on a PWR Basket with the load for which the MPC is qualified) that the MPC can withstand the Concrete Cask off-normal handling load. Accordingly, the first paragraph is revised to introduce this methodology.

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	In the second paragraph, the verb tense is changed to reflect the completion of the PWR Basket deceleration calculation as previously contained in this section, and to change the section reference numbering from "8.1" to "1" to be consistent with the reference numbering of the other ISFSI SAR sections. With the revised methodology as described above, the discussion of how PWR Basket handling stresses were determined and their values in Table 8.1-1 are unnecessary and have been eliminated. Replacing this discussion is the proof by comparison as described above, and the corresponding design handling stresses applicable to the MPC are provided in Table 8.1-1 to replace those of the PWR Basket.
8.1.1.1.4	Reference to "PWR Basket" is changed to "MPC" as described previously.
8.1.2.1.1	References to "PWR Basket" are changed to "MPC" as described previously. The design decay heat load for the ISFSI confinement boundary is now based on the MPC loaded with 24 fuel assemblies, each assembly generating a decay heat equivalent to the most limiting Trojan-specific fuel assembly based on a combination of cooling time and burnup. This results in a design decay heat load of 17.4 kWt, which is conservative since only one spent nuclear fuel assembly at Trojan is most limiting, and the other 23 fuel assemblies in the MPC containing the single most limiting fuel assembly will have combinations of cooling time and burnup that are not as limiting.
8.1.2.1.3	Reference to "PWR Basket" is changed to "MPC" as described previously.
8.1.2.2.3	The description of the event analysis in this section is revised editorially to enhance readability. For example, air inlet blockage is expressed in terms of percentage of total inlet area (as opposed to number of inlets), and loss coefficient is now expressed in terms of hydraulic resistance. The reduction in air mass flow as a result of the postulated partial blockage is changed from 16 percent to 34 percent to reflect the change in the methodology that was used in the analysis (FLUENT versus ANSYS). The reduction was obtained by direct comparison of air flows in computational fluid dynamics calculations for no blockage and 50 percent blockage simulations. The sentence immediately following the specification of the "34 percent" air flow reduction is eliminated since it added no useful information and detracted from readability. Finally, the last sentence of the first paragraph is revised to eliminate

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	discussion of application of the ANSYS code since as stated above, the FLUENT code was applied in this analysis for the Holtec MPC inside the TranStor Concrete Cask.
8.1.3.1	References to "PWR Baskets" are changed to "MPCs" as described previously.
8.1.3.1.1, 8.1.3.1.2	Reference to "PWR Basket" is changed to "MPC" as described previously.
8.1.3.1.3	References to "PWR Basket" are changed to "MPC" as described previously. The methodology used in this section is unchanged, but input parameters were revised to reflect design differences between the MPC and the PWR Basket. Specifically, the physical dimensions that were provided for the PWR Basket are updated to reflect the dimensions of the MPC, such that the assumed values for allowable surface contamination remain as 1.0×10^{-4} μCi/cm^2 beta-gamma and 1.0×10^{-5} μCi/cm^2 alpha. The corresponding activity that could be released from up to 36 MPCs is changed from 941.6 μCi to 989.8 μCi of ^{60}Co. The consequences of an inadvertent release of this surface contamination from the exterior of the MPCs is thus changed from a Committed Effective Dose Equivalent of 2.4 mrem to 2.50 mrem (at 100 meters). A minor change is made to the assumed reference man's breathing rate, from "3.33×10^{-4} m^3/sec" to "3.3×10^{-4} m^3/sec." The revised value is consistent with NRC Interim Staff Guidance 5, Revision 1, and has an insignificant effect on dose calculation results.
8.1.4, 8.1.4.1	References to "Basket" and "PWR Basket" are changed to "MPC" as described previously.
8.1.4.1.1	References to "PWR Basket" are changed to "MPC" as described previously. The symbol "%" is spelled out as "percent" to be consistent with similar references throughout the ISFSI SAR. The fourth sentence is revised editorially to clarify that the off-normal condition involves one of the 34 MPCs, rather than an MPC in addition to the 34 MPCs.
8.1.4.1.2	Reference to "PWR Basket" is changed to "MPC" as described previously.
8.1.4.1.3	References to "PWR Basket" are changed to "MPC" as described previously. The analysis of effects and consequences of postulated confinement boundary leakage provided in this section is revised to reflect differences in design between the PWR Basket and the MPC, and in other assumptions used in this calculation.

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	Specifically, the smaller cavity free volume associated with the MPC as opposed to the PWR Basket results in an increase in source term concentration. In addition, the basis for the off-normal leakage rate is changed from the PWR Basket Technical Specification leak rate to a calculated design MPC leak rate of 7.37×10^{-6} cm^3/sec for normal and off-normal conditions. This leakage rate is calculated in proprietary Holtec Report No. HI-2012677, "Trojan ISFSI Site Boundary Confinement Analysis," which is provided concurrently with this enclosure. Other assumption changes include: (1) revising the dispersion factor for a distance of 150 meters as opposed to the previous 325 meters, which is conservative since, as discussed previously, the Controlled Area boundary as revised will be 225 meters (reduced from 325 meters); (2) changing the occupancy factor upon which the calculated doses are based from 8760 hr/yr to 2080 hr/yr, which as stated in Section 7.6.2 is consistent with Interim Staff Guidance Document 13 to represent a conservative maximum estimate of a real individual's occupancy time at the Controlled Area boundary. Accordingly, the time conversion factor incorporated into the dose equations presented in this section is changed from 8760 hr/yr to 7.49×10^6 sec/yr (corresponds to 2080 hr/yr); (3) adding dose due to submersion in the plume; (4) neglecting wind direction frequency and the consideration of "worst sector." Similar to as discussed above for Section 8.1.3.1.3, a minor change is made to the assumed reference man's breathing rate, from "3.33×10^{-4} m^3/sec" to "3.3×10^{-4} m^3/sec." With these changes, the resultant dose consequences were calculated similar to the previous calculations using NRC guidance. Other changes to this section include presenting the release rate equations and calculations for gas and for volatiles/fines/crud as a single equation and calculation for conciseness and consistency. Consistent with the above assumption changes, the dose equations presented in this section are now presented for both inhalation and submersion, from which Total Effective Dose Equivalent (TEDE) and Total Organ Dose Equivalent (TODE) equations are derived and presented. The resultant doses for postulated MPC leakage are provided in a revised Table 8.2-2, indicating that the dose requirements of 10 CFR 72.104, 10 CFR 72.106, and 10 CFR 20 are satisfied. Additional details with regard to this analysis are provided in proprietary Holtec Report No. HI-2012677, "Trojan ISFSI Site Boundary Confinement Analysis," which is provided concurrently with this enclosure.

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8.1.4.1.4	As stated above for Section 8.1.4.1.3, the occupancy factor upon which the calculated doses resulting from off-normal MPC leakage are based has been revised from 8760 hr/yr to 2080 hr/yr, which as stated in Section 7.6.2 is consistent with Interim Staff Guidance Document 13 to represent a conservative maximum estimate of a real individual's occupancy time at the Controlled Area boundary. Moreover, the 2080 hr/yr occupancy factor is conservative considering the land usage patterns in the vicinity of the Trojan ISFSI. The occupancy factor for purposes of complying with State of Oregon Administrative Rule (OAR) 345-026-0390(4)(f) is changed from 2000 hr/yr to 2080 hr/yr. This change is conservative since it assumes that more time is spent by the reference man in the affected area, and even with this change, the TEDE requirement of OAR 345-026-0390(4)(f) is not exceeded. Reference to the use of a PWR Basket Overpack has been eliminated as described previously.
8.2	An editorial correction is made to eliminate redundancy, such that "...the Design Events III and IV events from..." becomes "...the Design Events III and IV from...."
8.2.1	The title of this section is revised to replace "PWR Basket" with "MPC Confinement Boundary," and reference to "PWR Basket" in the text of this section is replaced with "MPC," as described previously.
8.2.1.1	Reference to "PWR Basket" is changed to "MPC" as described previously, and the symbol "%" is spelled out as "percent" to be consistent with similar references throughout the ISFSI SAR.
8.2.1.2	References to "PWR Basket" are changed to "MPC" as described previously. As with the postulated normal and off-normal leakage analysis discussed in Section 8.1.4, this analysis is revised to determine the dose to a reference person located at a distance of 150 meters as opposed to the previous 325 meters, which had been the Controlled Area boundary. Analysis of this hypothetical event at 150 meters is conservative since the Controlled Area boundary is being revised to 225 meters. The first paragraph is revised to reflect this change. To more appropriately characterize the primary dose path, the second paragraph is changed from "...dose...is dominated by volatile and fission product fines..." to "...dose...is dominated by the dose due to inhalation of the effluent release." Regulatory Guide 1.109 is eliminated from this discussion since the new

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	confinement boundary analysis was based primarily on the guidance of ISG-5 and NUREG-6487.
	The summary description of the contents of the MPC has been revised to clarify that the assumed burnups, cooling times, and enrichments are chosen to conservatively bound the Trojan spent fuel for this event. Furthermore, the equations and constants needed to estimate the dose are eliminated from this section, and a reference is added that states that the equations and constants needed to estimate the dose are the same as presented in Section 8.1.4.1.3 with three exceptions: (1) accident condition dispersion factor = 5.20×10^{-4} sec/m^3; (2) MPC leak rate = 1.28×10^{-5} cm^3/sec; and (3) release duration = 30 days, or 2.59×10^6 sec.
	These exceptions and reference to Section 8.1.4.1.3 involve the revision of several calculation assumptions. First, the basis for the accident release rate is changed from the PWR Basket Technical Specification leak rate to a calculated design MPC leak rate of 1.28×10^{-5} cm^3/sec for an accident condition. Second, the internal free volume is changed from that of the PWR Basket to the MPC internal flow volume, and the flow volume is now quantified as 5.96×10^6 (cm^3). (The basis for these values is described in proprietary Holtec Report No. HI-2012677, "Trojan ISFSI Site Boundary Confinement Analysis," which is provided concurrently with this enclosure.) Third, as described in ISFSI SAR Section 2.3.4, the atmospheric dispersion factor (χ/Q) for a hypothetical accident condition is changed and is now quantified as 5.20×10^{-4} sec/m^3, corresponding to a distance of 150 meters. Calculational detail for this scenario is provided in proprietary Holtec Report No. HI-2012677, "Trojan ISFSI Site Boundary Confinement Analysis," which is provided concurrently with this enclosure.
8.2.1.3	References to "PWR Basket" are changed to "MPC" as described previously.
	This section is revised to reflect changes in the analysis assumptions and associated results as described above for Section 8.2.1.2. The first paragraph is revised to reiterate that the analysis results reflect the calculation of dose to a reference person located at a distance of 150 meters. Analysis of this hypothetical event at 150 meters is conservative since the Controlled Area boundary is being revised to 225 meters to reflect new dose calculations based on the Holtec MPC design and bounding Trojan spent nuclear fuel characteristics and loading configurations. See ISFSI SAR Sections 7.6.2 and 8.2.4.3 for additional details on the reduction in the Trojan ISFSI Controlled Area boundary from 325 meters to 225 meters.

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	The first sentence in the first paragraph is revised editorially, replacing "on" with "in" before "Table 8.2-2." The third sentence in the second paragraph is eliminated for readability, since establishment of the boundary pursuant to Oregon Administrative Rule (OAR) 345-026-0390(4)(c) is discussed in ISFSI SAR Section 8.2.4, and Section 8.2.4 is referenced in this Section 8.2.1.3.
8.2.2.2	The last paragraph of this section is revised to reflect a change in methodology presented in Sections 4.2.5.4.3 and 4.2.6 for analyzing the thermal stresses in the Concrete Cask. The methodology changes include use of the FLUENT analysis code for modeling the MPC in the Concrete Cask instead of the ANSYS/THERMAL code that had been used to model the PWR Basket in the Concrete Cask. The Concrete Cask thermal stresses are now analyzed using a conservative temperature gradient that bounds the results for the normal and off-normal ambient conditions and the maximum anticipated heat load represented in the Section 8.2.2.2 accident analysis. Therefore, the thermal gradient and associated stress across the concrete wall are higher (they were lower under the previous thermal analysis methodology) for this accident condition than for the normal case. A reference to the Concrete Cask thermal stress analysis of Section 4.2.5.4.3 is also added to this section. Additional information with regard to the thermal analysis methodology is provided in ISFSI SAR Sections 4.2.6 and 4.2.5.4.3, and the methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
8.2.3.1	An editorial change is made to use the more common spelling of the plural form of the word tornado, i.e., tornadoes versus tornados.
8.2.3.2	References to "PWR Basket" are changed to "MPC" as described previously.
	The last sentence of the fourth paragraph that cited a 44g limiting peak deceleration for the stored fuel is eliminated. This value was the result of analyses performed by BFS, the previous supplier of the Trojan ISFSI components, based on BFS systems and components and using BFS methodology. With the selection of Holtec to complete the Trojan ISFSI design, this value is no longer applicable to the Trojan Storage System. Furthermore, the limiting peak deceleration for the fuel is discussed in the last paragraph of this ISFSI SAR section under the heading "Results." This later discussion is consistent with analyses contained in the NRC-approved Holtec FSAR for the HI-STAR 100 System, which uses an MPC upon which the Trojan MPC design is based. The HI-STAR 100 System is designed and

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	evaluated for a maximum deceleration of 60g. The last paragraph of Trojan ISFSI SAR Section 8.2.3.2 is revised to reflect the conclusions in the Holtec HI-STAR FSAR, based on studies of the capability of spent fuel rods to resist impact loads. These studies indicate that the most vulnerable fuel can withstand 63g in the most adverse orientation, such that designing the HI-STAR 100 System to a maximum deceleration of 60g will ensure that fuel rod cladding integrity is maintained during normal, off-normal, and accident conditions. The accident analysis that is described in this section of the overturning event continues to be based on a total system weight of 290,000 lbs, which includes the TranStor™ Concrete Cask and a fully loaded PWR Basket. The loaded Trojan Storage System, which consists of a loaded Holtec MPC in a TranStor™ Concrete Cask, weighs slightly more at 292,700 lbs. A paragraph is added that demonstrates that, considering this difference in weights and the associated difference in center of gravity height, the maximum deceleration due to a tip-over of a Concrete Cask containing a fully loaded MPC will decrease slightly over the computed value for the Concrete Cask containing a PWR Basket. Under the heading "Results," the word "bounding" is added to describe the "32g to 38g" deceleration values associated with the unlikely tip-over of the Concrete Cask containing an MPC and subsequent impact with the pad. These deceleration values were originally derived based on the Concrete Cask and a fully loaded PWR Basket. As stated above, the deceleration of the Concrete Cask containing an MPC is less than that of the Concrete Cask with a PWR Basket. Therefore, this change emphasizes the bounding nature of these values in light of the additional conservatism introduced as previously described. A sentence is added to provide the design basis deceleration value of 60g for the Holtec MPC, and to indicate clearly the significant margin that exists between the bounding deceleration values resulting from the postulated cask overturning event, as described above, and the design basis deceleration value for the MPC.
8.2.4.2.1	The analyses of the (sliding and rotational) effects of calculated force and moment on a loaded Concrete Cask are revised to account for the slightly increased weight of a Concrete Cask with loaded MPC (292,700 lbs) as compared to a Concrete Cask with loaded PWR Basket (290,000 lbs). Thus, the calculated values for the resisting moment of the Concrete Cask and the wind force-to-normal force ratio are changed slightly, as indicated in the mark-up.

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8.2.4.2.2	Reference to "PWR Basket" is changed to "MPC" as described previously. Similarly, reference to the Basket Overpack is eliminated as described previously.
8.2.4.2.3	An editorial correction adds a space between the hyphen and the word "Cask" in the title of this section. Several other editorial changes are made to this section to enhance readability and consistency with the remainder of the Trojan ISFSI SAR. Specifically, in the next-to-last sentence of the first paragraph, "Ref:" is changed to "References," the reference numbering is changed from "8.8 and 8.9" to "8 and 9," and the order in which the corresponding references are cited is reversed to be consistent with the order of the numbering (i.e., clarifies that Reference 8 corresponds to EPRI Report NP-1217 and Reference 9 is EPRI Report NP-440).
8.2.4.2.4	An editorial change is made to the reference numbering, replacing "8.10" with "10" to be consistent with the reference numbering in the other ISFSI SAR sections.
8.2.4.2.5	The analyses of the overall damage effects associated with a high-energy missile impact on a loaded Concrete Cask are revised to account for the slightly increased weight and mass, and associated change in the center of mass, of a Concrete Cask with a loaded MPC as compared to a Concrete Cask with a loaded PWR Basket. The effects of these design changes on the calculation results are indicated in the mark-up. An editorial correction in the last sentence of the first paragraph adds two commas to enhance punctuation for readability. In the second paragraph and near the middle of the section, editorial changes are made to the reference numbering, replacing "8.10" with "10" and "8.9" with "9" to be consistent with the reference numbering in the other ISFSI SAR sections.
8.2.4.2.6	The analyses of the overturning effects associated with the combined effects of a high-energy missile impact and tornado winds on a loaded Concrete Cask are revised to account for the slightly increased weight and mass, and associated change in the center of mass, of a Concrete Cask with loaded MPC as compared to a Concrete Cask with loaded PWR Basket. The effect of these design changes on the calculated value for the Concrete Cask restoring moment is indicated in the mark-up.
8.2.4.2.7	References to "PWR Basket" are changed to "MPC" as described previously. References to the PWR Basket Overpack are eliminated as described previously. A punctuation change, replacing a comma with a semi-colon, is made to the last sentence to enhance sentence structure and readability.

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8.2.4.3	Reference to "PWR Basket" is changed to "MPC" as described previously. The Concrete Cask surface dose rates cited in the first paragraph for before and after a tornado missile impact and the collective doses for repair of the Concrete Cask provided in the second paragraph are updated. These updates reflect revised shielding analysis methodology, as described in detail in ISFSI SAR Section 7.3.2, as well as reflect the MPC design (as opposed to the PWR Basket) and updated bounding Trojan spent nuclear fuel characteristics (i.e., design basis combination of burnup, 42,000 MWD/MTU, and cooling time, 9 years). Additional details of the dose calculation results for the loaded Concrete Cask and ISFSI are provided in ISFSI SAR Sections 7.4 and 7.6 and Tables 7.4-1 and 8.2-2. The shielding modeling methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012749, "Shielding Evaluation for the Trojan ISFSI Completion Project," which is provided concurrently with this enclosure. Changes to the last paragraph reflect the change in the Controlled Area boundary to 225 meters based on new dose calculations specific to the Holtec MPC design and bounding Trojan spent nuclear fuel characteristics (i.e., design basis combination of burnup, 42,000 MWD/MTU, and cooling time, 9 years) and loading configurations. See ISFSI SAR Sections 7.6.2 and 8.2.4.3 for additional details on the reduction in the Trojan ISFSI Controlled Area boundary from 325 meters to 225 meters. With consideration for this change in the Trojan ISFSI Controlled Area boundary, the discussion of direct radiation levels at 100 meters is replaced by direct radiation levels at the Controlled Area boundary, which is the primary location of interest for assessing dose to the public.
8.2.5.2	References to "PWR Basket" are changed to "MPC" as described previously. The analysis of the effects associated with the Seismic Margin Earthquake (SME) on a loaded Concrete Cask is revised to account for the slightly increased weight and mass of a Concrete Cask with loaded MPC (292,700 lbs) as compared to a Concrete Cask with loaded PWR Basket (290,000 lbs). The resultant effect on the fundamental natural frequency of vibration for the loaded Concrete Cask is a slight decrease from 48.8 Hz to 48.5 Hz, and on the factor of safety against overturning is a slight increase from 1.17 to 1.19. Similarly, the Concrete Cask seismic shear and moment calculation results are also slightly impacted. The development of the revised values is detailed in the markup. These revisions do not change any of the conclusions with respect to the ability of the Trojan Storage System to withstand an SME.

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	As described previously, editorial changes are made to reference numbering in this section to be consistent with the reference numbering in the other ISFSI SAR sections. In addition, for the Concrete Cask seismic moment equation, the definition of the parameter "*l*" is now specified as the height of the Concrete Cask above the air inlet ducts. This definition is added for consistency and to clarify and stipulate the source of each parameter in the equations used in this calculation.
8.2.6	References to "PWR Basket" are changed to "MPC" as described previously.
	The "MPC containment/confinement boundary" is now referred to only as the "MPC confinement boundary" to clarify the MPC's primary function as a barrier between the radioactive material inside the MPC and the environment. This function is consistent with the definition of "confinement systems" as defined in 10 CFR 72.3.
8.2.6.1	References to "PWR Basket" are changed to "MPC" as described previously. An associated conforming change eliminates reference to the "structural lid," which was applicable only to the PWR Basket, and instead refers to the MPC lid.
	For consistency throughout the ISFSI SAR, the symbol "%" has been spelled out as "percent."
8.2.6.2	References to "PWR Basket" are changed to "MPC" as described previously. Associated changes are made to reflect the use of the MPC, including a change in initial internal gas pressure and temperature from 1 atmosphere and 150°F (applicable to the PWR Basket) to 46 psia and 70°F (applicable to the MPC), respectively. Also based on the design differences between the MPC and PWR Basket, the free volume inside the confinement boundary, including fuel rod voids, is changed from 352,101 in^3 (for the PWR Basket) to 363,946 in^3 (for the MPC). These changes were the basis for an associated change in the assumption regarding the quantity of helium backfill gas, which increased from 207 moles (for the PWR Basket) to 774 moles (for the MPC). Based on the above assumption changes, the total moles of gas in the MPC are increased to 1,171 moles as compared to 604 that had been calculated for the PWR Basket.
	Maximum accident pressure was calculated in this section based on helium at a bulk temperature of 374°F, which is changed from the 503°F assumed for the PWR Basket. This change reflects the lower design decay heat – 17.4 kWt versus 26 kWt – that is used to bound the Trojan spent fuel, as discussed in Trojan ISFSI SAR

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	Section 3.3.7. The resultant maximum accident pressure is increased from 67.6 psia (for the PWR Basket) to 109.5 psia (for the MPC). The resultant stresses are maintained within the Code allowables for the Service Level D loadings. The applicable ASME Code section is changed from Class 2 (applicable to the PWR Basket design) to Class 1 (applicable to the MPC design) of Section III, Division 1. For consistency, "Helium" is spelled out, replacing "He" in the previous version. Reference to the PWR Basket Overpack is eliminated as described previously.
8.2.7	The title of and the sentence in the section are revised to reflect the fact that this accident has been reanalyzed for the MPC assuming that all Concrete Cask air inlets (but not outlets) are completely blocked. The basis for this change is provided below for Section 8.2.7.1.
8.2.7.1	The postulated full blockage of air flow condition had been analyzed for the PWR Basket assuming that all Concrete Cask air inlets and all outlets are completely blocked. This accident has been reanalyzed for the MPC assuming that all Concrete Cask air inlets (but not outlets) are completely blocked. This assumption is reasonable since the outlets are located on the upper sides of the Concrete Cask, such that their blockage is highly unlikely. Furthermore, this assumption is consistent with Holtec methodology and modeling assumptions for analyzing this postulated scenario as presented in the HI-STORM 100 System FSAR. Editorial changes are made to the second sentence of this paragraph, replacing "which" with "that" and "screen covered" with "screen-covered" to enhance sentence structure and readability.
8.2.7.2	The full blockage of air flow accident had been analyzed for the PWR Basket assuming an ambient temperature of 75°F with no solar load. This accident has been reanalyzed for the MPC assuming an ambient temperature of 100°F with solar insolation. As discussed above for Section 8.2.7.1, the postulated full blockage of air flow condition had been analyzed for the PWR Basket assuming that all Concrete Cask air inlets and all outlets are completely blocked, and has been reanalyzed for the MPC assuming that all Concrete Cask air inlets (but not outlets) are completely blocked. The wording of the first and second paragraphs is revised to reflect this assumption change and its effect on air flow in the Concrete Cask/MPC annulus. The time to reach the maximum concrete allowable temperature for short term conditions is revised based on the same Concrete Cask body and MPC exterior

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	thermal model described in Section 4.2.6.4, and using the new decay heat load of 17.4 kWt (versus 26 kWt that had been used to bound the PWR Basket) that is a more realistic bounding decay heat assumption for the Trojan-specific fuel. The new value is presented in this section. The basis for changing the design decay heat load for the Trojan Storage System is described above for Section 3.3.7.1. The second paragraph is revised to clearly state that the Concrete Cask inner concrete temperature limit is reached well before the temperature limits of the fuel cladding or other Trojan Storage System components are reached. Controls on the time that air pads may be installed and inflated under the loaded Concrete Cask prevent the inner concrete temperature from reaching its short-term temperature limit, which in turn ensures that the fuel cladding and other components do not reach their short-term temperature limits. Discussion of the Concrete Cask outer concrete temperature at 57.1 hours is maintained in this paragraph and in Table 4.2-12, indicating the thermal gradient across the Concrete Cask concrete when the concrete inner surface temperature reaches its short-term limit. The methodology and calculation detail for this scenario is contained in proprietary Holtec Report No. HI-2012697, "Transient Thermal-Hydraulic Analysis of the Trojan ISFSI," which is provided concurrently with this enclosure. Finally, an editorial change in the second paragraph replaces "short term" with the hyphenated "short-term" to enhance readability. The last paragraph is revised to remove the word "visual." This change reflects the fact that potential blockage of the air inlets would be detected by either of two periodic surveillances required by Technical Specifications – weekly visual inspections and daily outlet temperature readings. Potential blockage of the air inlets likely would also be detected by other periodic surveillances, including the annual concrete and Storage Pad inspections.
8.2.8.2	The calculation of the force and moment required to slide and uplift, respectively, a Concrete Cask is revised to account for the slightly increased weight and mass, and associated change in the center of mass, of a Concrete Cask with loaded MPC as compared to a Concrete Cask with loaded PWR Basket. The effect of these design changes on the analysis results are detailed in the markup of this section. Reference to "PWR Basket" is changed to "MPC" as described previously, and reference to the Basket Overpack is eliminated as described previously.

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8.2.9	Reference to the PWR Basket Overpack is eliminated as described previously. Reference to "Shipping Cask" is changed to "Transport Cask" as described previously. In addition to these two conforming changes, an editorial change replaces references to "forklift" (as the vehicle used to move the Concrete Casks) with "transport vehicle" to more accurately characterize the vehicle that is intended to be used for this function.
8.2.10	A correction is made to the height cited for the Trojan Plant cooling tower. Inadvertently cited as 492 feet, this reference is corrected to the actual "499-foot" height.
8.2.11.1	An editorial correction is made to the grammar in the first sentence of this section, replacing "...activity...are addressed..." with "...activity...is addressed...."
8.2.12.1	For consistency and as described previously, Reference "8.7" is changed to Reference "7."
8.2.12.2	References to "PWR Basket" are changed to "MPC" as described previously.
8.2.13	References to "PWR Basket" are changed to "MPC" as described previously. Reference to operations involving the PWR Basket Overpack is eliminated as described previously. References to "Shipping Cask" are changed to "Transport Cask" as described previously.
8.2.13.1	References to "PWR Basket" are changed to "MPC" as described previously.
8.2.13.1.1	References to "PWR Basket" are changed to "MPC" as described previously. In addition, the second sentence is revised editorially to clarify that contact between the MPC and Transfer Cask would be detected audibly, and upward movement of the Transfer Cask would be detected "visually."
8.2.13.1.2	References to "PWR Basket" are changed to "MPC" as described previously. Reference to "Shipping Cask" is changed to "Transport Cask" as described previously. In the second paragraph, "Concrete Cask" is changed to the more general term "cask" to reflect the fact that at the Transfer Station, the "receiving cask" is the Transport Cask, and in the Fuel Building the receiving cask is the Concrete Cask.
8.2.13.2	References to "PWR Basket" are changed to "MPC" as described previously. The title and contents of this section are revised to clarify that this scenario is analyzed for both the Concrete Cask and the Transport Cask.

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8.2.13.2.1	References to "PWR Basket" are changed to "MPC" as described previously. Reference to the PWR Basket Overpack is eliminated as described previously. Reference to "Shipping Cask" is changed to "Transport Cask" as described previously. The second sentence of this section is revised editorially to clarify that contact between the MPC and Transfer Cask, Concrete Cask, or Transport Cask would be detected audibly, and slackening of the lifting slings would be detected "visually." Representing unnecessary detail, specification of "wire" slings is eliminated to prevent misinterpretation of the composition of these lifting components.
8.2.13.2.2	References to "PWR Basket" are changed to "MPC" as described previously. Reference to the PWR Basket Overpack is eliminated as described previously. Reference to "Shipping Cask" is changed to "Transport Cask" as described previously. In the first sentence of the first paragraph, an editorial correction replaces "worse case" with "worst case."
8.2.13.3	References to "PWR Basket" are changed to "MPC" as described previously. Reference to the PWR Basket Overpack is eliminated as described previously. Reference to "Shipping Cask" is changed to "Transport Cask" as described previously. The title of this section is revised to clarify that this scenario is analyzed for an MPC drop into both the Concrete Cask and the Transport Cask.
8.2.13.3.2	References to "PWR Basket" are changed to "MPC" as described previously. References to operations involving the PWR Basket Overpack are eliminated as described previously. References to "Shipping Cask" are changed to "Transport Cask" or "HI-STAR 100 Transport Cask" as described previously. An editorial change is made to the second sentence of this section to clarify that the loaded MPC is raised "from within the Concrete Cask" and then lowered vertically into the Transport Cask. The analysis assumption with respect to how the drop height is determined is changed in the second paragraph, which results in a change in the drop height value from 241 inches to 249 inches. This new drop height is bounded by an analysis performed on a postulated MPC drop accident during inter-cask transfer operations at a generic and bounding Transfer Station. This analysis is described in detail in a new ISFSI SAR Section 8.2.13.3.3, and a reference to the new Section 8.2.13.3.3, MPC Drop Analysis, is added to this Section 8.2.13.3.2. An editorial change is made to the second paragraph that clarifies that only an end drop is applicable for

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	this scenario because of how the MPC is transferred (vertically) at the Transfer Station during inter-cask transfer operations. An editorial correction is made to the third paragraph, eliminating the descriptor "revised" in the phrase "...revised design concept of the Transfer Station...." Two editorial changes are made to the fourth paragraph. First, the tense of several sentences is changed from "will be" to "is," since the Transfer Station has already been constructed. Second, the description of the design function of the Transfer Station impact limiter is restated in terms of providing "...defense-in-depth to ensure acceptable MPC confinement boundary stresses...," as opposed to maintaining "acceptable...decelerations." This change is intended to enhance the design function description since it is now stated directly in terms of actual design basis stresses of the MPC confinement boundary. An editorial correction is made to the fifth paragraph, replacing "...will remained fixed..." with "...will remain fixed...." Similarly, in the sixth paragraph, "...moved onto position..." is replaced with "...moved into position...." An introductory phrase is added to the beginning of the eighth paragraph to enhance readability and flow. The remainder of this section, which discussed structural integrity of the fuel during this postulated drop, is eliminated, with consideration for a similar discussion that is presented in the last paragraph of ISFSI SAR Section 8.2.3.2 under the heading "Results." This discussion is consistent with analyses contained in the NRC-approved Holtec FSAR for the HI-STAR 100 System, which incorporates an MPC design upon which the Trojan MPC design is based. The HI-STAR 100 System is designed and evaluated for a maximum deceleration of 60g. As described in the last paragraph of Trojan ISFSI SAR Section 8.2.3.2, studies of the capability of spent fuel rods to resist impact loads indicate that the most vulnerable fuel can withstand 63g in the most adverse orientation, such that designing the HI-STAR 100 System to a maximum deceleration of 60g ensures that fuel rod cladding integrity is maintained during normal, off-normal, and accident conditions.

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8.2.13.3.3	This section is renumbered to reflect the addition of a new 8.2.13.3.3. This section, now Section 8.2.13.3.4, is otherwise unchanged. The new Section 8.2.13.3.3, entitled "MPC Drop Analysis," is added to incorporate into the SAR a description of an analysis performed of a postulated MPC drop accident during inter-cask operations at a generic and bounding Transfer Station. This analysis demonstrates that the generic scenario bounds this postulated drop accident at the Trojan ISFSI, and that the integrity of the MPC confinement boundary is maintained as a result of the postulated drop accident.
8.2.13.3.4 (new)	As stated above, this section was previously numbered as 8.2.13.3.3, and has been renumbered to reflect the addition of a new 8.2.13.3.3. This section is otherwise unchanged.
8.2.13.4	References to "Shipping Cask" are changed to "Transport Cask" as described previously. Editorial corrections are made to the first sentence of the third paragraph, replacing "...criteria equivalent to that specified..." with "...criteria equivalent to those specified ..." for grammatical correctness, and adding a hyphen between "NUREG" and "0612" for consistency.
8.2.14.2.3	An editorial change to the third paragraph replaces the symbol "%" with "percent" for consistency with similar references throughout the ISFSI SAR. To reflect the design differences between the PWR Basket and the MPC, the weight of a loaded Concrete Cask specified in the fourth paragraph is changed from 290,000 lbs to 292,700 lbs.
8.2.14.3	Similar to a change made in Section 8.2.4.3, the collective doses for repair of the Concrete Cask provided in the last paragraph are updated. These updates reflect revised shielding analysis methodology, as described in detail in ISFSI SAR Section 7.3.2, as well as reflect the MPC design (as opposed to the PWR Basket) and updated bounding Trojan spent nuclear fuel characteristics (i.e., design basis combination of burnup, 42,000 MWD/MTU, and cooling time, 9 years). Additional details of the dose calculation results for the loaded Concrete Cask and ISFSI are provided in ISFSI SAR Sections 7.4 and 7.6 and Tables 7.4-1 and 8.2-2. The shielding modeling methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012749, "Shielding Evaluation for the Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.

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8.3	An editorial change is made to the third sentence of this section to clarify that the 15 feet center-to-center spacing of the Concrete Casks in an array configuration on the Storage Pad only applies to the Concrete Casks once they are loaded with the sealed MPC.
8.4	All reference numbering is revised to be consistent with the reference numbering of the other ISFSI SAR sections. Specifically, the format "8.X," where X is the sequential reference number, is changed such that the "8." prefix is eliminated. Editorial changes are made to Reference 3 to correct capitalization errors. The TranStor™ Part 71 Shipping Cask SAR is replaced as Reference 4 with the Holtec HI-STAR 100 Transportation Package SAR. This change reflect the fact that the Holtec HI-STAR 100 Transport Cask will be used at the Trojan ISFSI instead of the TranStor™ Part 71 Shipping Cask. A misspelling is corrected in Reference 14, changing "Mittsubishi" to "Mitsubishi." A new Reference 15 is added to reflect the incorporation of guidance from NRC Interim Staff Guidance Document No. 5 into the confinement analyses of Trojan ISFSI SAR Sections 8.1.4 and 8.2.1.
Table 8.0-1	References to "PWR Basket" are changed to "MPC," and reference to "PWR Basket Internals" is changed to "MPC Basket," as described previously.
Table 8.0-2	References to "PWR Basket" are changed to "MPC," and reference to "PWR Basket Internals" is changed to "MPC Basket," as described previously. Reference to PWR Basket Overpack operations is eliminated as described previously. References to "Shipping Cask" are changed to "Transport Cask" as described previously. Table formatting errors – missing lines/borders – are corrected. Missing hyphens are also added in appropriate table cells. Finally, Item 13 of this table had inadvertently indicated that "Radiological Consequences Only" had been analyzed for postulated events involving interference while lowering or raising the MPC. This has been corrected to reflect the fact that, as described further in Section 8.2.13.2.2, the MPC and Concrete Cask have been analyzed to be able to withstand the loadings involved in this postulated condition.

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Table 8.1-1	The PWR Basket off-normal handling stresses listed in this table are replaced with applicable MPC off-normal handling stresses, and accordingly, reference to "PWR Basket" is changed to "MPC." The column for dead weight is eliminated since, as discussed in Trojan ISFSI SAR Section 4.2.5.3.2, dead weight stress is bounded by off-normal handling stress. The column for thermal stress is eliminated since, as discussed in Section 4.2.5.3.5, thermal loads do not contribute to the primary stress levels in the MPC. The column for pressure stress is eliminated since pressure is included as part of the off-normal handling load under the column heading "Maximum Stress." These changes are consistent with Holtec analysis methodology as reflected in the HI-STORM FSAR. The table column for ASME Allowable Service Level values has been changed to include Level D values that are applied to the MPC design, as opposed to the Level C values that had been applicable to the PWR Basket design for off-normal events. Service Level D accident limits are conservatively applied for off-normal handling of the Trojan Storage System with MPC, since the off-normal handling stresses in this table are bounded by the design basis handling accident for the Holtec MPC, a 60g lateral side drop.
Table 8.1-3	References to "PWR Basket" are changed to "MPC" as described previously. Reference to installation of the "Basket Overpack" is eliminated as described previously.
Table 8.1-4	Editorial corrections are made to the release fraction symbols, such that "f(x)" is changed to "f_x," to be consistent with the format of these symbols as used in the analyses presented in Chapter 8. The value of the crud spalling release fraction, f_c, is changed from 1.0 to 0.15 to accurately reflect the value given in NRC Interim Staff Guidance Document No. 5, Table 7.1, which has 0.15 as the crud spalling release fraction for normal and off-normal conditions. This change represents a correction of a typographical error.
Table 8.2-1	The PWR Basket accident pressurization stresses listed in this table are replaced with applicable MPC accident pressurization stresses, and accordingly, reference to "PWR Basket" is changed to "MPC." The Basket Overpack accident pressurization stresses are removed from the table, and accordingly, reference to the "Basket Overpack" is eliminated as described previously. Itemization of each individual stress component is replaced by a single value for maximum stress. Itemization of each individual stress component is replaced by a

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	single value for maximum stress/load that includes combined stresses due to pressure, dead weight, and normal handling, as appropriate (e.g., dead weight is neglected in the stress calculation for the lid since it opposes the accident MPC internal pressure). The column for thermal stress is eliminated since, as discussed in Section 4.2.5.3.5, thermal loads do not contribute to primary stress levels in the MPC. These changes are consistent with Holtec analysis methodology as reflected in the HI-STORM FSAR. The table column for ASME Allowable Stress/Capacity values has been changed to include Section III, Division 1, Class 1 values applicable to the MPC design, as opposed to the Class 2 values that had been applicable to the PWR Basket design. The safety factor for each component has been added to the table in the last column to clearly indicate the design margin integrated into the design of the Holtec MPC, as incorporated into the Trojan Storage System. This change is consistent with Holtec analysis methodology as reflected in the HI-STORM FSAR.
Table 8.2-2	This table contains the results of dose calculations for normal operations, off-normal events, and the hypothetical bounding accident. Having been originally calculated for the PWR Basket and a Controlled Area Boundary of 325 meters, these results are revised for the MPC at a distance of 150 meters. Since the dose results at 150 meters satisfy the requirements of 10 CFR 72.104 and 10 CFR 72.106, then the reduced Controlled Area Boundary at 225 meters also meets the requirements of these regulations. Other assumption changes that have been incorporated into the new dose calculations are as described above for Sections 7.3.2, 7.6, 8.1.4.1.3, 8.1.4.1.4, and 8.2.1.2. The calculation detail resulting in the values in this table is described in proprietary Holtec Report No. HI-2012677, "Trojan ISFSI Site Boundary Confinement Analysis," which is provided concurrently with this enclosure.
Table 8.3-1	Reference to "PWR Basket" is changed to "MPC" as described previously. An editorial change is made to use the more common spelling of the plural form of the word tornado, i.e., tornadoes versus tornados.
Figure 8.1-1	This figure previously provided a graphical representation of the Concrete Cask temperature distribution that was generated using the ANSYS model based on a 100°F ambient temperature (with solar load) and a design decay heat load of 26 kW in the PWR Basket contained in the Concrete Cask. Because the PWR Basket has been replaced as part of the Trojan Storage System by the MPC, this figure is replaced by a corresponding figure applicable to the Concrete Cask containing an MPC. The new Figure 8.1-1 was generated using the FLUENT model based on the

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	same 100°F ambient temperature (with solar load) and the updated design decay heat load of 17.4 kW. Additional information with regard to the thermal analysis methodology is provided in ISFSI SAR Sections 4.2.6 and 4.2.5.4.3, and the methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
Figure 8.1-2	This figure previously provided a graphical representation of the Concrete Cask temperature distribution that was generated using the ANSYS model based on a -40°F ambient temperature (without solar load) and a design decay heat load of 26 kW in the PWR Basket contained in the Concrete Cask. Because the PWR Basket has been replaced as part of the Trojan Storage System by the MPC, this figure is replaced by a corresponding figure applicable to the Concrete Cask containing an MPC. The new Figure 8.1-2 was generated using the FLUENT model based on the same -40°F ambient temperature (without solar load) and the updated design decay heat load of 17.4 kW. Additional information with regard to the thermal analysis methodology is provided in ISFSI SAR Sections 4.2.6 and 4.2.5.4.3, and the methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.
Figure 8.2-1	This figure previously provided a graphical representation of the Concrete Cask short-term temperature distribution that was generated using the ANSYS model based on a 125°F ambient temperature (with solar load) and a design decay heat load of 26 kW in the PWR Basket contained in the Concrete Cask. Because the PWR Basket has been replaced as part of the Trojan Storage System by the MPC, this figure is replaced by a corresponding figure applicable to the Concrete Cask containing an MPC. The new Figure 8.2-1 was generated using the FLUENT model based on the same short-term 125°F ambient temperature (with solar load) and the updated design decay heat load of 17.4 kW. Additional information with regard to the thermal analysis methodology is provided in ISFSI SAR Sections 4.2.6 and 4.2.5.4.3, and the methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012676, "Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project," which is provided concurrently with this enclosure.

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Figure 8.2-2	This figure had provided a graphical representation of the missile/cask impact geometry associated with a Concrete Cask containing a fully loaded PWR Basket. Since the MPC is replacing the PWR Basket in the Trojan Storage System, this figure is revised to reflect the weight and center of gravity of a Concrete Cask loaded with an MPC (these design characteristics change slightly from those of the Concrete Cask when it was to be loaded with a PWR Basket).
Figure 8.2-3	This figure had provided a graphical representation of the cask tip-over geometry associated with a Concrete Cask containing a fully loaded PWR Basket. Since the MPC is replacing the PWR Basket in the Trojan Storage System, this figure is revised to reflect the weight and center of gravity of a Concrete Cask loaded with an MPC (these design characteristics change slightly from those of the Concrete Cask when it was to be loaded with a PWR Basket).
Figure 8.2-4	This figure provides a graphical representation of the results of a thermal transient analysis to determine concrete temperature as a function of time during an event involving full blockage of all Concrete Cask air inlets and outlets. This figure had provided these analysis results associated with a Concrete Cask containing a fully loaded PWR Basket. Since the MPC is replacing the PWR Basket in the Trojan Storage System, this figure is revised to reflect a new thermal transient analysis of the Concrete Cask containing a fully loaded MPC. The new figure incorporates some revised analysis assumptions (discussed in SAR Section 8.2.7), including the new design basis decay heat load of 17.4 kWt (versus 26 kWt), initial ambient temperature of 100°F with solar insolation (versus 75°F with no solar load), and all air inlets blocked. The methodology and calculation detail is contained in proprietary Holtec Report No. HI-2012697, "Transient Thermal-Hydraulic Analysis of the Trojan ISFSI," which is provided concurrently with this enclosure.
Figure 8.2-5	This figure is deleted to reflect the fact that the Concrete Cask inner concrete temperature limit is reached well before the temperature limits of the fuel cladding or other Trojan Storage System components are reached. Thus, this figure that had showed fuel cladding temperature as a function of time during the full blockage of air flow accident does not provide information pertinent to the limiting parameter in this scenario – inner concrete surface temperature – and thus is deleted. As discussed above for Section 8.2.7.2, controls on the time that air pads may be installed and inflated under the loaded Concrete Cask prevent the inner concrete temperature from reaching its short-term temperature limit, which in turn ensures that the fuel cladding and other components do not reach their short-term temperature limits. The methodology and calculation detail for the "full blockage of air flow scenario" is contained in proprietary Holtec Report No. HI-2012697,

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	"Transient Thermal-Hydraulic Analysis of the Trojan ISFSI," which is provided concurrently with this enclosure.
Figure 8.2-6	The graphical depiction of the PWR Basket rigging slings and hoist rings that had been provided in this figure is replaced with a drawing of the lifting components that are applicable to the MPC – referred to as the MPC lift cleats and rigging.

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9.0	A reference to the TNP Decommissioning Plan, PGE-1061, is updated to reflect the recent revision of this TNP licensing document to incorporate into it the approved TNP License Termination Plan (PGE-1078).
9.1.1, 9.1.1.1, 9.1.1.2.1, 9.1.1.2.2, 9.1.1.2.3, 9.1.1.2.4, 9.1.1.2.5, 9.1.1.2.6, 9.1.1.2.7, 9.1.1.2.8, 9.1.2, 9.1.2.4, 9.1.2.5	Numerous Trojan ISFSI organization changes are incorporated into this SAR revision. The change from the single "Trojan Site Executive and Plant General Manager" position to two separate positions, "Trojan Site Executive" and "General Manager, Trojan," received prior NRC approval as incorporated into TNP License Amendment No. 207. The remaining changes to these sections reflect title, responsibility, and/or organization changes that have been evaluated at TNP pursuant to 10 CFR 50.59 and 10 CFR 72.48 and determined to not require prior NRC approval. These changes are provided in this draft Revision 2 since they are approved changes to the ISFSI SAR and will be incorporated into this ISFSI SAR revision. The changes to these sections involve some changes to section numbering, including moving the sections describing Nuclear Oversight and the Independent Review and Audit Committee to new Sections 9.1.1.1.1 and 9.1.1.1.2 to emphasize their reporting and advising structure, respectively, and their independence from the facility line organization. In addition, the position of General Manager, Engineering and Decommissioning, is split into two positions – Manager, Engineering, and Manager, Decommissioning Projects. Other changes to these sections reflect these organizational modifications. An editorial change to Section 9.1.1 adds two introductory sentences to clarify the purpose of this section. Similarly, Sections 9.1.2.4 and 9.1.2.5 are renumbered as new Sections 9.1.2.1.1 and 9.1.2.1.2, respectively, to emphasize the reporting and advising structure of Corporate Support personnel and the ISFSI Safety Review Committee. An editorial change to Section 9.1.2 adds a sentence to clarify the transition between the ISFSI construction and fuel loading organization and the ISFSI operation organization. As stated above, these and associated changes have already been evaluated per 10 CFR 50.59 and 10 CFR 72.48 and determined to not require prior NRC approval.
9.1.1.3, 9.1.1.4	These sections are revised to reflect the new contractor/supplier relationships and responsibilities associated with PGE's selection of a new ISFSI vendor - Holtec International - to design, analyze, and complete the Trojan Storage System. These sections maintain discussion of BNFL's role in the design and analysis of portions

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	of the Trojan ISFSI and Storage System that have been completed, as well as PGE's oversight and management roles. Editorial changes to Section 9.1.1.4 include updating the verb tense in the first sentence to reflect the completion of Concrete Cask and Failed Fuel Can design, and eliminating the definition of "BFS" since this acronym is defined in the Section 9.1.1.3.
9.1.4	"Holtec International" replaces "BNFL Fuel Solutions" as the outside organization that provides engineering, technical support, and other services for the Trojan ISFSI. Additional wording is provided that summarizes the components, systems, and services for which Holtec primarily provides design and construction support. An editorial change is made for readability, eliminating an unnecessary "the" from the second sentence.
9.2	References to "PWR Basket" are changed to "MPC" to reflect updates in component and system terminology. The first paragraph is revised to reflect differences in the startup and preoperational tests associated with placing the Concrete Cask containing the Holtec MPC into service, and to clarify the purposes of these tests. As discussed further in Section 9.2.3.2, the startup test will now consist only of external radiation dose rate measurement for each Concrete Cask, and will no longer include heat transfer validation testing for each Concrete Cask. Heat transfer validation testing will now be performed only on the first Concrete Cask to be loaded, expected to contain the lowest decay heat load of all the Trojan ISFSI casks, and on the third Concrete Cask to be loaded, expected to contain the highest heat load. Performance of heat transfer validation testing only on the first and third loaded Concrete Casks is consistent with NRC-approved methodology as presented in Holtec's FSAR for the generically approved HI-STORM System, in which cask thermal performance must only be tested if the decay heat exceeds 10 kW and exceeds a previously tested cask by 2 kW or more. In fact, performance of heat transfer validation testing only on the first and third loaded Concrete Casks is more conservative since the first and second casks to be loaded contain a decay heat less than 10 kW. The reference to preoperational "tests" in the first paragraph is changed to "test" to reflect the fact that the only operating system for the loaded Trojan Storage System is the air outlet temperature monitoring system, and thus testing of this system is the only test considered to be "preoperational." The Transfer Station and side members

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	testing, which had been previously included as a preoperational test, is still performed, but it is now considered as "other" required testing as reflected in Table 9.2-1. As stated above, the changes in the first paragraph include clarification of the intended results of the startup and preoperational tests. The purpose of the startup test is also changed to reflect the fact that heat transfer validation testing is no longer considered part of each Concrete Cask's startup test, as discussed above. The second sentence of the third paragraph is revised to reflect the fact that the fabrication of Concrete Casks is completed.
9.2.1	"Holtec International" replaces "BNFL Fuel Solutions" as the entity that shares with PGE, as applicable and under PGE oversight, responsibilities for developing test procedures, performing tests, and ensuring that test acceptance criteria are satisfied for tests performed at fabricator facilities. Holtec is also added as the entity that shares with PGE, as applicable and under PGE oversight, responsibilities for developing test procedures, performing tests, and ensuring that test acceptance criteria are satisfied for tests performed at the Trojan site. These changes reflect PGE's selection of Holtec to complete the Trojan Storage System.
9.2.2	Reference to "PWR Basket" is changed to "MPC" as described previously. A parenthetical phrase is added in the second paragraph to clarify that testing of the Concrete Cask air outlet temperature monitoring system is considered to be the "preoperational test." Similar to as discussed above for Section 9.2, the second paragraph of Section 9.2.2 is revised to reflect the purpose of the startup test now that heat transfer validation testing is no longer considered part of each Concrete Cask's startup test. Specifically the purpose of the startup test is revised to represent the intended result of external radiation dose rate measurement for each Concrete Cask. Discussion of shielding in the fourth paragraph is revised editorially with regards to testing of shielding for "shielding effectiveness." A sentence is added to specify testing for neutron shielding to ensure that it "will perform its intended function." An editorial correction is made to the next-to-last sentence of the fourth paragraph, such that steel properties will be verified by review "...and appropriate test reports" becomes "...of appropriate test reports."

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9.2.3.1.1	References to "PWR Basket" are changed to "MPC" as described previously. Associated changes are made to reflect component design and terminology consistent with the change from the PWR Basket to the MPC. The first paragraph had discussed the construction of a full-scale prototype of the PWR Basket. Rather than a full-scale prototype of the MPC, several MPC weld mock-ups and a full size, full-weight dummy MPC will be constructed. As can be seen in the markup of this entire section, these changes do not materially impact the testing that will be done to ensure (1) proper component fitup; (2) the ability to safely and effectively load the MPC with spent nuclear fuel; and (3) the ability to dry, backfill, and seal the loaded MPC. The specific manner in which these tests will be performed is described in ISFSI SAR Table 9.2-1. As can be seen in Table 9.2-1 as redlined, the changes reflected in this section do not materially change the purpose or function of the component/system testing that had been described previously for the PWR Basket. "Vacuum drying" is changed to "drying" to allow for an added option to achieve required MPC cavity dryness - the helium recirculation method.
9.2.3.1.2	The discussion of load testing in this section has been rewritten for readability, and to reflect some differences in the testing of the Transfer Cask structural load path. These changes do not impact the load testing of the Transfer Cask lifting trunnions, which will continue to be load tested to 300 percent (changed from "%" in the markup to be consistent thoughout the SAR) of design load. However, the remainder of the Transfer Cask structural load path and the Lifting Yoke had been tested under the previous designs to 300 percent of design load. Now in preparation for lifting the Holtec-designed Transfer Cask with MPC, the Lifting Yoke will be load tested along with the Transfer Cask structural load path other than the Transfer Cask lifting trunnions at the fabrication shop at 150 percent of the design load. This change reflects different technical positions, with respect to Transfer Cask structural load path test requirements, between the previous Trojan ISFSI designer/supplier, BNFL Fuel Solutions (BFS), and the current vendor, Holtec International. Specifically, under the BFS design, the entire Transfer Cask and the Transfer Cask Lifting Yoke were conservatively treated as "special lifting devices" as defined in NUREG-0612 and ANSI N14.6 (1978), and the loaded Transfer Cask was conservatively considered as a "critical load" as defined in ANSI N14.6. The ANSI N14.6 load testing requirement for a special lifting device includes a

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	150 percent load test prior to initial use. When lifting a critical load, ANSI N14.6 includes provisions to double the normal stress design factors and to double the load test weight. Thus, under the extremely conservative design assumptions of the BFS storage system, the entire Transfer Cask and Transfer Cask Lifting Yoke were load tested to double the 150 percent load test weight, or 300 percent of design load. Under the Holtec generically approved HI-TRAC Transfer Cask and associated Transfer Cask Lifting Yoke designs, upon which the Trojan ISFSI Transfer Cask and Transfer Cask Lifting Yoke designs are based, only the Transfer Cask Lifting Yoke and Transfer Cask trunnions are classified as and designed to the requirements for special lifting devices. PGE's technical position is that classification of the trunnions as special lifting devices is conservative since the trunnions would more appropriately be classified as "lifting attachments." The Holtec interpretation is additionally conservative, especially in light of the fact that the Transfer Cask, except for the trunnions, is designed in accordance with ASME Section III, Subsection NF. Furthermore, PGE has analyzed postulated canister drops in the Fuel Building and concluded that no safety systems are impacted, and radiological consequences do not exceed 10 CFR 100 limits, such that the loaded Transfer Cask/MPC does not meet the ANSI N14.6 definition of a "critical load." Based on the Holtec component classifications as described above, ANSI N14.6 requires the Lifting Yoke and trunnions to be load tested using 150 percent of their design load. Thus, the changes to this SAR section that require load testing for the Transfer Cask trunnions at 300 percent of design load, and require load testing for the remainder of the Transfer Cask and the Transfer Cask Lifting Yoke at 150 percent of design load, are conservative with respect to the load testing requirements of NUREG-0612 and ANSI N14.6. As revised, the load test at 150 percent of design load will also demonstrate the structural capability of the Transfer Cask bottom doors. This represents an enhancement of the previous load testing plan, which called for a test load equivalent to the heaviest fully loaded PWR Basket to demonstrate structural capability of the Transfer Cask bottom doors. Other editorial wording changes towards the end of the first paragraph clarify the load testing that will be performed at the point of loading a Transport Cask. References to "PWR Basket" are changed to "MPC" as described previously.

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	In the next-to-last paragraph, reference to the "prototype" PWR Basket is changed to "dummy" MPC to be consistent with the similar change in Section 9.2.3.1.1, and references to the "Fuel Building bay" in this and the last paragraph are revised for clarity and consistency of terminology to instead read "Fuel Building crane bay."
9.2.3.1.3	References to "PWR Basket" are changed to "MPC" as described previously. Reference to the "prototype basket" is changed to "dummy MPC" to be consistent with the similar change in Section 9.2.3.1.1.
9.2.3.1.4	The description of the load test of the air pad system is changed from "...a test load equivalent to a fully loaded Concrete Cask..." to "...a Concrete Cask containing the dummy MPC that weighs at least as much as a fully fuel-loaded Concrete Cask...." This change is consistent with similar changes in other sections related to the "dummy MPC," and does not materially affect the function of this test, which is to ensure that the air pad system can safely move a loaded Concrete Cask and to verify the travel path. Specifically, instead of moving a test load equivalent to a fully-loaded Concrete Cask, the air pad system will move a Concrete Cask containing the dummy MPC that weighs at least as much as a fully loaded MPC.
9.2.3.1.5	This section described testing of the Basket Overpack, and thus has been deleted since the design of the MPC is such that an overpack is not required.
9.2.3.1.6	This section is renumbered as Section 9.2.3.1.5 to reflect the deletion of the previous Section 9.2.3.1.5 as described above. Reference to the "prototype basket" is changed to "dummy MPC" to be consistent with the similar change in Section 9.2.3.1.1.
9.2.3.2	As described above for Section 9.2, the description of the startup test that is performed for each Concrete Cask after loading is revised. Prior to the revision, the startup test consisted of activities necessary to confirm design dose rates for each cask are satisfied, as well as to confirm that the heat generated by each cask is consistent with that expected for the specific spent nuclear fuel loaded into the cask. With the revision, the startup test that is performed for each Concrete Cask has been redefined such that it consists only of external dose rate confirmation. The confirmation of heat load is now referred to as heat transfer validation testing, and will be performed on the first Concrete Cask, anticipated to be the lowest heat load cask, and the third Concrete Cask, expected to be the highest heat load cask. The basis for this change is discussed above for Section 9.2.

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	As also stated above for Section 9.2, the changes in this section include clarification of the intended results of the startup test and what is now separate heat transfer validation testing. The purpose of the startup test is also changed to reflect the fact that heat transfer validation testing is no longer considered part of each Concrete Cask's startup test. In the heat transfer validation testing description, the discussion of the temperature measurement of air inlets and air outlets is clarified to make clear that the average measured temperature difference is the value that is compared to the calculated temperature difference. The last sentence is revised to eliminate "or lower" since with the conservatisms incorporated into the calculations, measured temperature differences that are lower than calculated temperature differences are expected and are not of concern. References to "PWR Basket" are changed to "MPC" as described previously.
9.3.1	In the first paragraph, "OSHA compliance" is added to the list of areas in which individuals requiring unescorted access to the Trojan ISFSI will receive training. This change is made to provide a more complete representation of the unescorted access training topics and their focus on occupational and public health and safety. The first sentence of the third paragraph is revised to allow for the normal turnover of staff, especially in light of the ongoing and extended delay in transferring the spent nuclear fuel from the Spent Fuel Pool to the Trojan ISFSI. This change eliminates the unnecessary restriction on staff retention while maintaining the pertinent requirement to use Certified Fuel Handlers during the conduct of fuel handling operations. Fuel "handling" is specified to more accurately reflect Certified Fuel Handlers' role in ISFSI loading, which is broader in scope than fuel handling. The first sentence of the fourth paragraph is revised editorially to clarify that the "Restricted Area" discussed in this section is the "ISFSI Restricted Area," as opposed to the TNP Restricted Area.
9.4.1	Reference to "PWR Basket" is changed to "MPC" as described previously. A change is made in the first paragraph to conform with a change to the Trojan ISFSI technical specifications that are revised concurrently with this proposed SAR revision. Specifically, the list of activities for which procedures shall be established, implemented, and maintained is removed from Trojan ISFSI Technical Specification 5.4.1 to conform with the standard technical specifications guidance

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	of NUREG-1745. Therefore, the phrase "[i]n addition to the procedures stated in ISFSI Technical Specification 5.4.1" is removed. Conforming changes are made in the third paragraph to reflect implementation of revisions to NRC rules 10 CFR 50.59 and 10 CFR 72.48 as described in the final rule issued October 4, 1999, in Federal Register (FR) notice 64 FR 53582 (NRC effective dates were March 13, 2001, and April 5, 2001, respectively). These changes have been reviewed pursuant to 10 CFR 50.59 and 10 CFR 72.48 and determined not to require prior NRC approval, and are provided in this draft Revision 2 since they are approved changes to the ISFSI SAR and will be incorporated into this ISFSI SAR revision.
9.4.2, 9.6.1, 9.6.2, 9.6.3	Conforming changes are made to reflect implementation of revisions to NRC rules 10 CFR 50.59 and 10 CFR 72.48 as described above for Section 9.4.1. These changes have been reviewed pursuant to 10 CFR 50.59 and 10 CFR 72.48 and determined not to require prior NRC approval, and are provided in this draft Revision 2 since they are approved changes to the ISFSI SAR and will be incorporated into this ISFSI SAR revision. Item 5 of the list of ISFSI Safety Review Committee review responsibilities in Section 9.6.2 contains a minor editorial change, replacing "which" with "that" to enhance sentence structure and readability.
9.7.6	References to "PWR Basket" are changed to "MPC" as described previously. An editorial change is made to clarify that the height restriction on the lifting of Concrete Casks applies to "loaded" Concrete Casks. Reference to "Shipping Cask" is changed to "Transport Cask" to be consistent with terminology of the new ISFSI vendor.
9.8	A reference to the TNP Decommissioning Plan, PGE-1061, is updated to reflect the recent revision of this TNP licensing document to incorporate into it the approved TNP License Termination Plan (PGE-1078).
9.8.1	Reference to "storage PWR Baskets" is changed to "MPCs" as described previously.
9.8.2	A reference to the TNP Decommissioning Plan, PGE-1061, is updated to reflect the recent revision of this TNP licensing document to incorporate into it the approved TNP License Termination Plan (PGE-1078).

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9.8.3	References to "PWR Basket" are changed to "MPC" as described previously. Reference to "transportation system" is changed to "Transport Cask" to be consistent with terminology of the new ISFSI vendor.
Table 9.1-1	A reference to "ISFSI specialists" is changed to "ISFSI Specialists" for consistency of capitalization.
Table 9.2-1	References to "PWR Basket" are changed to "MPC" as described previously. Associated changes are made to reflect differences in the design and component terminology associated with the MPC, including the MPC fuel basket, as compared to the design and terminology associated with the PWR Basket and internals. With the change in design and terminology associated with the change from the PWR Basket internal assembly to the MPC fuel basket, an additional testing step is added for this component that specifies loading of a Failed Fuel Can into the MPC basket corner cell. The first test purpose, to check fit-up with the MPC shell, is eliminated since the MPC and MPC fuel basket come as a fully assembled unit, and thus fit-up will be demonstrated as part of fabrication. References to "vacuum drying" are changed to "drying" or "moisture removal" to reflect the addition of the helium recirculation method as an option for achieving required MPC cavity dryness. As discussed above for Section 9.2.3.1.2, the Transfer Cask Lifting Yoke load test weight has been changed from 300 percent to 150 percent of design load. Also as discussed above for Section 9.2.3.1.2, the load test to demonstrate the structural capability of the Transfer Cask bottom doors is changed from a weight of "at least equivalent to a fully loaded MPC" to 150 percent of design load. As discussed above for Section 9.2.3.1.4, the description of the load test of the air pad system is conservatively changed from "...the weight equivalent of a fully loaded Concrete Cask..." to "...the weight at least equivalent of a fully loaded Concrete Cask." Although unchanged in their requirements, the testing of the Transfer Station and side members is changed from a classification of "Pre-op" testing to "Other." As described above for Section 9.2, the only operating system for the loaded Trojan Storage System is the air outlet temperature monitoring system, and thus testing of

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	this system's components is the only test considered to be "preoperational." The word "component" is added in this table for this preoperational test to clarify that operation of the system components will be tested, but that this test will not involve connection of the entire temperature monitoring system at the actual Storage Pad location. Testing requirements for the PWR Basket Overpack have been eliminated to reflect the use of Holtec's MPC in lieu of the PWR Basket. The design of the MPC is such that an overpack is not required. As discussed above for Section 9.2.3.2, the startup test that is performed for each Concrete Cask has been redefined such that it consists only of dose rate confirmation activities. The confirmation of heat load is now referred to as heat transfer validation testing, and will be performed on the lowest heat load cask, anticipated to be the first Concrete Cask loaded, and the highest heat load cask, expected to be the third Concrete Cask loaded. An additional load path test, the Transfer Cask from the Fuel Building crane bay to the Cask Wash Pit, is added to the "Component compatibility/load travel path" test, as this load path was inadvertently omitted from this table. This load path test is discussed in Section 9.2.3.1.2. References to the "Fuel Loading Bay" are revised for clarity and consistency of terminology to instead read "Fuel Building crane bay."
Figure 9.1-1	As described above for various subsections of Section 9.1.1, numerous Trojan ISFSI organization changes are incorporated into this SAR revision. These changes impact Figure 9.1-1. The change from the single "Trojan Site Executive and Plant General Manager" position to two separate positions, "Trojan Site Executive" and "General Manager, Trojan," received prior NRC approval as incorporated into TNP License Amendment No. 207. The remaining changes to these sections reflect title, responsibility, and/or organization changes that have been evaluated at TNP pursuant to 10 CFR 50.59 and 10 CFR 72.48 and determined to not require prior NRC approval. These changes are provided in this draft Revision 2 since they are approved changes to the ISFSI SAR and will be incorporated into this ISFSI SAR revision.

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Figure 9.1-2	As described above for various subsections of Section 9.1.1, numerous Trojan ISFSI organization changes are incorporated into this SAR revision. These changes impact Figure 9.1-2, in that "Purchasing" is added as a responsibility under Corporate Support for consistency with Section 9.1.2.4. As with the changes discussed above for Sections 9.1.1 and 9.1.2, this change is part of title, responsibility, and/or organization changes that have been evaluated at TNP pursuant to 10 CFR 50.59 and 10 CFR 72.48 and determined to not require prior NRC approval. This change is provided in this draft Revision 2 since it is an approved change to the ISFSI SAR and will be incorporated into this ISFSI SAR revision.

CHAPTER 10

Section(s) Affected	Description of and Reason for Change(s)
10.0	The reference to the "Concrete Cask system" in the first sentence is changed to "Trojan Storage System" to be consistent with terminology defined in Section 1.2. References to "PWR Basket" are changed to "MPC" to reflect updates in component and system terminology. The Trojan ISFSI Technical Specifications are being revised concurrently with these SAR changes. The revised technical specifications are developed consistent with the format of the standard technical specifications for dry cask storage facilities, which is contained in NUREG-1745. Thus, the reference to NUREG-1431 in the third paragraph is replaced with reference to NUREG-1745.

CHAPTER 11

Section(s) Affected	Description of and Reason for Change(s)
11.0	Additional words are added to clarify the Trojan ISFSI components to which BNFL Fuel Solutions' 10 CFR 72, Subpart G, QA Program applies. This additional information specifies the current revision (as of May 2001) of this QA Program and the associated NRC 10 CFR 71 QA Program Approval. A description of Holtec International's 10 CFR 72, Subpart G, QA Program is added, with general specification of the Trojan ISFSI components to which this QA Program applies. This information includes a description of the associated NRC 10 CFR 71 QA Program Approval issued to Holtec.

ENCLOSURE 3

to VPN-044-2001

Trojan ISFSI

LCA 72-02

Affidavits for Withholding

Proprietary Information

Contained in Enclosures 4 and 5

AFFIDAVIT PURSUANT TO 10CFR2.790

I, Brian Gutherman, being duly sworn, depose and state as follows:

(1) I am Licensing Manager of Holtec International and have reviewed the information described in paragraph (2) which is sought to be withheld, and am authorized to apply for its withholding.

(2) The information sought to be withheld is included in the following Holtec International Calculation Reports:

- Holtec Report No. HI-2012676, Thermal-Hydraulic Calculations for Trojan ISFSI Completion Project, Revision 2.
- Holtec Report No. HI-2012677, Trojan ISFSI Site Boundary Confinement Analysis, Revision 3.
- Holtec Report No. HI-2012681, Criticality Evaluation for the Trojan ISFSI Completion Project, Revision 2.
- Holtec Report No. HI-2012697, Transient Thermal-Hydraulic Analysis of the Trojan ISFSI, Revision 1.
- Holtec Report No. HI-2012725, Computation of the Peak Cladding Temperature During Vacuum Drying of Trojan Fuel (Trojan ISFSI Completion Project), Revision 2.
- Holtec Report No. HI-2012749, Shielding Evaluation for the Trojan ISFSI Completion Project, Revision 1.

This information is considered proprietary to Holtec International.

(3) In making this application for withholding of proprietary information of which it is the owner, Holtec International relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4) and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10CFR Part 9.17(a)(4), 2.790(a)(4), and 2.790(b)(1) for "trade secrets and commercial or financial information obtained from a person and privileged or confidential" (Exemption 4). The material for which exemption from disclosure is here sought is all "confidential commercial information", and some portions also qualify

under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).

(4) Some examples of categories of information which fit into the definition of proprietary information are:

a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by Holtec's competitors without license from Holtec International constitutes a competitive economic advantage over other companies;

b. Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product.

c. Information which reveals cost or price information, production, capacities, budget levels, or commercial strategies of Holtec International, its customers, or its suppliers;

d. Information which reveals aspects of past, present, or future Holtec International customer-funded development plans and programs of potential commercial value to Holtec International;

e. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs 4.a, 4.b, 4.d, and 4.e, above.

(5) The information sought to be withheld is being submitted to the NRC in confidence. The information (including that compiled from many sources) is of

a sort customarily held in confidence by Holtec International, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by Holtec International. No public disclosure has been made, and it is not available in public sources. All disclosures to third parties, including any required transmittals to the NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.

(6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within Holtec International is limited on a "need to know" basis.

(7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his designee), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside Holtec International are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.

(8) The information classified as proprietary was developed and compiled by Holtec International at a significant cost to Holtec International. This information is classified as proprietary because it contains detailed descriptions of analytical approaches and methodologies not available elsewhere. This information would provide other parties, including competitors, with information from Holtec International's technical database and the results of evaluations performed by Holtec International. Release of this information would improve a competitor's position without the competitor having to expend similar resources for the

development of the database. A substantial effort has been expended by Holtec International to develop this information.

(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to Holtec International's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of Holtec International's comprehensive spent fuel storage technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology, and includes development of the expertise to determine and apply the appropriate evaluation process.

The research, development, engineering, and analytical costs comprise a substantial investment of time and money by Holtec International.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

Holtec International's competitive advantage will be lost if its competitors are able to use the results of the Holtec International experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to Holtec International would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive Holtec International of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

AFFIDAVIT PURSUANT TO 10CFR2.790

STATE OF NEW JERSEY)
) ss:
COUNTY OF BURLINGTON)

Mr. Brian Gutherman, being duly sworn, deposes and says:

That he has read the foregoing affidavit and the matters stated therein are true and correct to the best of his knowledge, information, and belief.

Executed at Marlton, New Jersey, this 16th day of October, 2001.

Brian Gutherman
Holtec International

Subscribed and sworn before me this 16th day of October, 2001.

MARIA C. PEPE
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires April 25, 2005

AFFIDAVIT PURSUANT TO 10CFR2.790

I, Brian Gutherman, being duly sworn, depose and state as follows:

(1) I am Licensing Manager of Holtec International and have reviewed the information described in paragraph (2) which is sought to be withheld, and am authorized to apply for its withholding.

(2) The information sought to be withheld is the following Holtec International Drawings:

- Holtec Drawing No. 3490, MPC-24E/EF Trojan Fuel Basket, Revision 2.
- Holtec Drawing No. 3518, MPC-24E Trojan Enclosure Vessel, Revision 4.
- Holtec Drawing No. 3555, HI-TRAC 100 Ton Trojan Transfer Cask Assembly, Revision 3.
- Holtec Drawing No. 3663, MPC-24EF Trojan Enclosure Vessel, Revision 3.
- Holtec Drawing No. 3668, 100 Ton HI-TRAC Lift Yoke, Revision 1.

This information is considered proprietary to Holtec International.

(3) In making this application for withholding of proprietary information of which it is the owner, Holtec International relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4) and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10CFR Part 9.17(a)(4), 2.790(a)(4), and 2.790(b)(1) for "trade secrets and commercial or financial information obtained from a person and privileged or confidential" (Exemption 4). The material for which exemption from disclosure is here sought is all "confidential commercial information", and some portions also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).

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c. Information which reveals cost or price information, production, capacities, budget levels, or commercial strategies of Holtec International, its customers, or its suppliers;

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(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to Holtec International's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of Holtec International's comprehensive spent fuel storage technology base, and its commercial value extends beyond the original development cost. The value

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Mr. Brian Gutherman, being duly sworn, deposes and says:

That he has read the foregoing affidavit and the matters stated therein are true and correct to the best of his knowledge, information, and belief.

Executed at Marlton, New Jersey, this 22nd day of October, 2001.

Brian Gutherman
Holtec International

Subscribed and sworn before me this 22nd day of October, 2001.

Maria C. Pepe

MARIA C. PEPE
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires April 25, 2005