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Design Analysis Cover Sheet

Complete only applicable items.

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2. DESIGN ANALYSIS TITLE

Examination of Security Events as DBEs for MGDS Important to Safety SSCs

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2. DESIGN ANALYSIS TITLE**Examination of Security Events as DBEs for MGDS Important to Safety SSCs****3. DOCUMENT IDENTIFIER (Including Rev. No.)****B00000000-01717-0200-00151 Rev. 00**

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00	Initial Issue.

1.0 PURPOSE

A portion of the safeguards and security system for the Mined Geologic Disposal System (MGDS) has been identified as QA-1 based on the classification of structures, systems, and components (SSCs) performed in accordance with QAP-2-3, *Classification of Permanent Items* (Reference 5.2). The classification analysis, *Classification of the Preliminary MGDS Repository Design* (Reference 5.5), identifies the 'Safeguards Material Control and Accountability' system as a QA-1 SSC based on the identification of unauthorized intrusion, sabotage, theft, and diversion as potential Design Basis Events (DBEs).

The purpose of this analysis is to provide justification to eliminate these events as DBEs for the MGDS based on a review of the Codes of Federal Regulation (CFRs) for geologic repositories (10 CFR 60), commercial reactor facilities (10 CFR 50), independent spent fuel storage installations (ISFSIs) and monitored retrievable storage (MRS) installations (10 CFR 72), and other relevant guidance documents in an effort to clarify that security events should not be considered in the QA design process of important to safety SSCs for the MGDS. The MGDS is a first of a kind geologic repository and no licensing precedent has been established for this type of facility.

2.0 QUALITY ASSURANCE

This analysis is performed in accordance with Quality Administrative Procedure QAP-3-9, *Design Analysis* (Reference 5.3) per Quality Administrative Procedure QAP-2-0, *Conduct of Activities* (Reference 5.1). Refer to the activity evaluation entitled *3-9 Analysis Supporting the QA Status of the MGDS Security System With Respect to Sabotage as a DBE* (Reference 5.4).

3.0 METHOD

The rationale for the QA classification of the MGDS Safeguards Material Control and Accountability system is presented to clarify the current QA-1 designation. 10 CFR 60 (Reference 5.8) for a geologic repository is reviewed to examine the regulatory requirements for safeguards and security systems. Regulatory requirements from 10 CFR 50 (Reference 5.7), 10 CFR 72 (Reference 5.9), and other guidance documents are also reviewed for licensing precedents established for safeguards and security systems at other types of nuclear facilities. From a review of these documents, two major arguments are presented to support the conclusion that unauthorized intrusion, sabotage, theft, and diversion should not be considered as potential DBEs in the design of important to safety SSCs for the MGDS. Rationale from each of the reviewed documents is presented to support this conclusion.

4.0 DESIGN INPUTS

Design inputs and requirements utilized in this analysis include requirements developed by the Nuclear Regulatory Commission (NRC), information developed by, and for, the nuclear industry, design codes and standards, and information developed by the Management and Operating Contractor (M&O) regarding design requirements. All are summarized in the following sections.

4.1 Design Parameters

Not applicable. Design parameters represent the engineering data used in design. This analysis does not perform a design function.

4.2 Design Criteria

Regulatory requirements provided in the following document(s) are used as inputs for performing this analysis:

- 10 CFR Part 60, *Disposal of High-Level Radioactive Waste in Geologic Repositories* (Reference 5.8).

4.3 Assumptions

- 4.3.1 For the purposes of this analysis, the assumption is made that an unauthorized intrusion with the intent to sabotage a system important to safety is an act of sabotage.

Basis: The *Preliminary MGDS Hazards Analysis* (Reference 5.6) has identified Inadvertent Future Intrusions (man-made) and Intentional Future Intrusions (man-made) as unauthorized intrusion events where the potential exists for undetected surface access into repository facilities. The security systems at the MGDS will prevent unauthorized intrusion through the use of physical barriers and other devices. Similarly, the MGDS security systems will prevent sabotage events by preventing an unauthorized intrusion.

- 4.3.2 It is assumed that this analysis, *Examination of Security Events as DBEs for MGDS Important to Safety SSCs*, will serve as a design input to a future revision of the classification analysis, *Classification of the Preliminary MGDS Repository Design* (Reference 5.5).

Basis: The classification analysis identifies the 'Safeguards Material Control and Accountability' system as a QA-1 SSC based on the identification of unauthorized intrusion, sabotage, theft, and the diversion as potential design basis events.

4.4 Codes and Standards

Not Applicable.

5.0 REFERENCES

Other sources for design inputs and additional references are identified in this section.

- 5.1 Quality Administrative Procedure QAP-2-0, *Conduct of Activities*, Revision 4, June 16, 1997.
- 5.2 Quality Administrative Procedure QAP-2-3, *Classification of Permanent Items*, Revision 08, June 16, 1997.
- 5.3 Quality Administrative Procedure QAP-3-9, *Design Analysis*, Revision 7, June 2, 1997.
- 5.4 Activity Evaluation, 3-9 *Analysis Supporting the QA Status of the MGDS Security System With Respect to Sabotage as a DBE*, dated 11/11/97.
- 5.5 *Classification of the Preliminary MGDS Repository Design*, DI: B00000000-01717-0200-00134, Rev. 00.
- 5.6 *Preliminary MGDS Hazards Analysis*, DI: B00000000-01717-0200-00130, Rev. 00, September 4, 1996.
- 5.7 10 CFR Part 50, *Domestic Licensing of Production and Utilization Facilities*, U.S. NRC, January 1, 1997.
- 5.8 10 CFR Part 60, *Disposal of High-Level Radioactive Waste in Geologic Repositories*, U.S. NRC, January 1, 1997.
- 5.9 10 CFR Part 72, *Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste*, U. S. NRC, January 1, 1997.
- 5.10 10 CFR Part 73, *Physical Protection of Plants and Materials*, January 1, 1997.
- 5.11 ANSI/AN-2.12-1978, *Guidelines for Combining Natural and External Man-Made Hazards at Power Reactor Sites*, America Nuclear Society, July 25, 1978.
- 5.12 NUREG-0800, *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants*, U.S. NRC, July 1981.

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- 5.13 NUREG-1567, *Standard Review Plan for Spent Fuel Dry Storage Facilities (Draft Report for Comment)*, U.S. NRC, October 1996.
 - 5.14 NUREG/CR-2300, *PRA Procedures Guide: A Guide to the Performance of Probabilistic Risk Assessments for Nuclear Power Plants*, U.S. NRC, January 1983.
 - 5.15 DOE Standard 3009-94, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Report*, July 1994.
 - 5.16 DOE Order 5480.23, *Nuclear Safety Analysis Report*, U.S. DOE, April 10, 1992.
 - 5.17 NUREG-1497, *Interim Licensing Criteria for Physical Protection of Certain Storage of Spent Fuel*, U.S. NRC, October 1994.
 - 5.18 Federal Register: August 15, 1995 (Volume 60, Number 157), Proposed Rule: *Safeguards for Spent Nuclear Fuel or High Level Radioactive Waste*, RIN: 3150-AF32, FR Doc. 95-20035 Filed 8-14-95; 8:45 am, For the Nuclear Regulatory Commission, Andrew L. Bates, Acting Secretary of the Commission.
 - 5.19 Interoffice Correspondence, CH.MGDS.JBS.12/97.086, *MGDS QAP 2-3 & QARD Rewrite: Updated Recommendations*, from J. B. Stringer to D. W. Gwyn, December 9, 1997.

6.0 USE OF COMPUTER SOFTWARE

No computational support software or other computer software requiring qualification was used in this analysis.

7.0 DESIGN ANALYSIS

7.1 General

A Preliminary Hazards Analysis (PHA) has been prepared for the Mined Geologic Disposal System (MGDS). The analysis provides a Preliminary Hazards List (PHL) using PHA methodology. The analysis identifies hazards with potential radiological consequences that are applicable to the conceptual preclosure design of the MGDS. The PHA methodology provides a systematic method to identify preliminary hazards that may exist in any system design. The resulting PHL is used as input to Design Basis Events (DBEs) analyses.

The *Preliminary MGDS Hazards Analysis* (Reference 5.6) has identified Inadvertent Future Intrusions (man-made) and Intentional Future Intrusions (man-made) as events where the potential exists for undetected surface access into repository facilities. The PHA concludes that "Inadvertent future intrusions will be prevented by active barriers (including Safeguards and Security measures) which will remain in effect through the preclosure period." The PHA also concludes that for Intentional Future Intrusions, "The potential exists for intentionally bypassing active barriers to surface facilities with the intent to sabotage a system important to radiological safety." For the purposes of this analysis, the assumption is made that an unauthorized intrusion with the intent to sabotage a system important to radiological safety is an act of sabotage (Assumption 4.3.1).

A QAP-2-3 classification analysis to support the classifications of individual SSCs has been performed for all permanent items identified in the PHA and will be updated as the design and/or evaluation of these permanent items evolve. The QAP-2-3 classification analysis either 1) justifies the items inclusion on the MGDS Q-List or, 2) justifies the item not being included on the MGDS Q-List. A portion of the safeguards and security system for the MGDS has been identified as QA-1 based on the classification of SSCs performed in accordance with QAP-2-3, *Classification of Permanent Items*. The classification analysis, *Classification of the Preliminary MGDS Repository Design* (Reference 5.5), identifies the 'Safeguards Material Control and Accountability System' as a QA-1 SSC based on positive responses to the following checklist questions and supporting rationale:

Question 1.1

Is the SSC required to provide reasonable assurance that the high-level waste can be received, handled, packaged, stored, emplaced, and retrieved without exceeding the federal limits?

Rationale for Question 1.1

"The security and safeguards system performs the surveillance and safeguards functions required to protect the repository from unauthorized intrusion, sabotage, theft, and the diversion of nuclear material. The safeguards material control and accountability is the subsystem responsible for

protecting and maintaining the inventories of nuclear material. If the waste packages were damaged during a theft, sabotage or diversion of nuclear material, the consequences could exceed the federal limits. Therefore, this system provides a reasonable assurance that high level waste can be received, handled, packaged, stored, emplaced and retrieved without exceeding the federal limits."

Question 1.2

Is the SSC required to function to prevent, mitigate, or monitor a credible Design Basis Event which would otherwise result in a radioactive release above the federal limits?

Rationale for Question 1.2

"The safeguards material control and accountability is the subsystem responsible for protecting and maintaining the inventories of nuclear material. If the waste packages were damaged during a theft, sabotage or diversion of nuclear material, the consequences could exceed the federal limits. Therefore, this system is required to function to prevent, mitigate, and monitor a credible DBE which would otherwise result in a radioactive release above the federal limits."

The following definition of QA Classification 1- Important to Radiological Safety provided in Section 3 of QAP-2-3 provides insight to the importance of DBEs on the classification of SSCs:

"With reference to MGDS SSCs, those engineered features of the repository whose function is: (1) to provide reasonable assurance that high-level waste can be received, handled, stored, emplaced, and retrieved without exceeding the requirements of 10 CFR 60.111(a) for Category 1 design basis events; or (2) to prevent or mitigate Category 2 design basis events that could result in doses equal to or greater than the values specified in 10 CFR 60.136 to any individual located on or beyond any point on the boundary of the preclosure controlled area."

As can be seen from the checklist questions and definition presented above, the key to eliminating the safeguards and security system from being classified as QA-1 is showing that unauthorized intrusion, sabotage, theft, and diversion should not be considered as potential DBEs in the designs of SSCs having important to safety functions. Traditionally, at most power reactor facilities, the security system as a whole has not been treated as an item which is required to follow established quality assurance (QA) procedures (Reference 5.19).

This analysis examines 10 CFR 60 (Reference 5.8) for geologic repositories, 10 CFR 50 (Reference 5.7) for commercial reactors, 10 CFR 72 (Reference 5.9) for independent spent fuel storage installations (ISFSIs) and monitored retrievable storage (MRS) installations, and other relevant guidance documents to clarify that security events should not be considered as potential design basis events in the QA design process of important to safety SSCs for the MGDS. From a review of these documents, two major arguments can be made to support this conclusion. The arguments are as follows:

- The exclusion of sabotage, theft, and diversion as DBEs is supported by the licensing documents, other guidance documents, and previous precedent as established at 10 CFR 50 licensed facilities, and
- The security plan and safeguards plan are to be submitted separately from the Safety Analysis Report (SAR) in the license application. This separation of safeguards and security information from the SAR indicates that design basis threats used in safeguards and security system design, including sabotage, should be addressed in a separate, more appropriate submittal containing the requirements of the facility's security design organization.

Supporting rationale from the documents described above is presented in subsequent sections.

7.2 Sabotage, Theft and Diversion

7.2.1 Review of 10 CFR 60 - Sabotage, Theft and Diversion

10 CFR Part 60 is the Code of Federal Regulation which "prescribes rules governing the licensing of the U.S. Department of Energy to receive and possess source, special nuclear, and by product material at a geologic repository operations area sited, constructed, or operated in accordance with the Nuclear Waste Policy Act of 1982." 10 CFR 60.21 states that a description of the physical security plan for protection against radiological sabotage must be submitted as part of the license application. With respect to the security plan, 10 CFR 60.21 states that no detailed information needs to be submitted on protection against theft or diversion due to the hazards associated with high-level wastes which make them inherently unattractive as a target. This directive removes theft and diversion from consideration as DBEs and focuses attention to sabotage. However, 10 CFR 60 provides no guidance on whether the effects of sabotage must or must not be considered in the design of the facilities for a geologic repository. Therefore, the remainder of this analysis focuses on the treatment of sabotage as a potential design basis event at the different types of nuclear facilities.

As currently written, 10 CFR 60 does not require the physical security plan and safeguards plan for geologic repositories to be based on 10 CFR 73. This point is important because 10 CFR 73 provides design basis threats which are used to design safeguards systems to protect against acts of radiological sabotage and to prevent the theft of nuclear material. In lieu of designing the physical protection system to meet the requirements of 10 CFR 73, 10 CFR 60 indicates that the safeguards systems at geologic repositories will be designed using the requirements of comparable DOE surface facilities. Specifically, 10 CFR 60.21(b)(3) states that the DOE is to provide certification that it will provide at the geologic repository operations area such safeguards as it requires at comparable surface facilities (of DOE) to promote the common defense and security.

Since DOE facilities use the PHA process to identify DBEs, it is important to identify the guidance

documents for this process. DOE Order 5480.23 (Reference 5.16), *Nuclear Safety Analysis Reports*, establishes the requirements for development of the safety analyses that establish and evaluate the adequacy of the safety bases of proposed DOE facilities. It is this order which establishes hazards analyses as a potential method to identify design basis events for DOE facilities. This order states that 'the SAR is to exclude acts of sabotage and other malevolent acts since these actions are covered under security protection of the facility.' In addition, DOE Standard 3009-94 (Reference 5.15), which was developed to assist SAR developers in satisfying the requirements of DOE Order 5480.23, states under its section on external man-made threats that sabotage and terrorism should not be included as potential accident initiators. Hence, sabotage should be excluded from the PHA for the applicable DOE facilities. **It should be noted, however, that this order and standard state that they are not applicable to facilities subject to NRC licensing which includes the MGDS.** Nevertheless, the fact remains that the preparation of PHAs for DOE facilities should not consider sabotage as an accident initiator.

As part of the general application portion of the license application, 10 CFR 60.21(b)(4) requires "a description of the physical security plan for protection against radiological sabotage." NUREG-1497, *Interim Licensing Criteria for Physical Protection of Certain Storage of Spent Fuel* (Reference 5.17), which presents interim criteria for use in the licensing review of physical protection plans for commercial spent fuel storage installations such as the proposed geologic repository operations area, selectively applies 10 CFR 73.50 requirements to the physical protection of spent fuel at these installations. As stated above, however, 10 CFR 60 does not require the physical protection system for geologic repositories to be based on 10 CFR 73. The Nuclear Regulatory Commission (NRC) has recognized this inconsistency in the applicability of 10 CFR 73 and has proposed a new regulation to clarify safeguards requirements for spent nuclear fuel or high-level radioactive waste being stored, whether temporarily or permanently. This action is being taken to reduce the regulatory uncertainty regarding these requirements. In part, the proposed rule (Reference 5.18) reads as follows:

"The Commission is proposing regulations to codify existing practice for the safeguarding of stored spent nuclear fuel or HLW. The proposed amendments would provide a set of physical protection and material control and accounting requirements directed at the storage of spent nuclear fuel or HLW, whether at an independent spent fuel storage installation (ISFSI), a monitored retrievable storage installation (MRS), a power reactor that has permanently ceased reactor operations, or a geological repository. In addition, these proposed amendments are consistent with safeguards requirements for spent nuclear fuel storage under a general license at operating power reactors."

"The proposed amendments would replace existing Sec. 60.21(b)(3) with a requirement for DOE to submit a detailed plan to provide physical protection for the storage of HLW at a GROA (Geologic Repository Operations Area) in accordance with a new Sec. 73.51. Also, the proposed amendment would replace existing Sec. 60.21(b)(4) with a requirement for DOE to comply with a new Sec. 60.78, which requires DOE to provide a description of a program to meet the requirements of existing Secs. 72.72, 72.74, 72.76, and 72.78. The rationale for these changes is...to ensure that

*the safeguards for similar facilities are addressed in a consistent manner. In addition, because these specific requirements are being provided, the general requirement for DOE to provide " * * * such safeguards as it requires at comparable surface facilities * * * " would also be removed from Secs. 60.31, 60.41, and 72.24(o), because it would not be needed. "*

As discussed in subsequent sections of this analysis, 10 CFR 50 and 10 CFR 72 licensed facilities must meet the requirements of 10 CFR 73 with respect to the design of a physical protection system. As indicated above in the proposed rule change, 10 CFR 60 licensed facilities will also have to meet the applicable requirements of 10 CFR 73 with respect to the design of a physical protection system. The proposed rule change was enacted to ensure that physical protection system requirements for SNF storage are consistent regardless of the type of storage facility (geologic repository, ISFSI, MRS, etc.). Therefore, it can be concluded that the safeguards requirements at a geologic repository will be consistent with safeguards requirements for spent nuclear fuel (SNF) storage under a general license at operating power reactors.

The following sections of this analysis, sections 7.2.2 and 7.2.3, show that for Part 50 and Part 72 licensed facilities, sabotage is not considered as a DBE with respect to the design of important to safety SSCs. Thus, based on the precedent set by these facilities and the precedent established by the above-mentioned DOE orders for comparable DOE facilities, sabotage should be removed from the list of DBEs with respect to the design of important to safety SSCs for the MGDS.

7.2.2 Review of 10 CFR 50 - Sabotage, Theft and Diversion

10 CFR Part 50 is the Code of Federal Regulation which prescribes the regulations for licensing of production and utilization facilities. Section 10 CFR 50.13 states that an applicant for a license to construct and operate a production or utilization facility, or for an amendment to such license, is not required to provide for design features or other measures for the specific purpose of protection against the effects of attacks and destructive acts, including sabotage, directed against the facility. This statement does not address design features which may *prevent* acts of sabotage (*i.e.*, the security system), it merely states that there will not be any design features which will *protect* against the effects of sabotage. In effect, this eliminates sabotage as a DBE which may impact the design of important to safety SSCs at these facilities.

Traditionally, at 10 CFR 50 facilities, sabotage events are not part of the internal and external events considered in QA designs of SSCs having important to safety functions. This exclusion is supported by the PRA (probabilistic risk assessment) guide for nuclear power plants, NUREG/CR-2300 (Reference 5.14); the standard review plan for nuclear power plants, NUREG-0800 (Reference 5.12); and by ANSI/ANS-2.12-1978 (Reference 5.11). These documents do not include sabotage as a design basis event with respect to the design of safety-related SSCs. In fact, a unique QA classification for nuclear station security items does not exist for Part 50 facilities (Reference 5.19). Hence, 10 CFR 50 licensed facilities, where risks and consequences may be considered greater than for a geologic repository by the NRC, have established a precedent for designs of safeguards and

security systems at other types of nuclear facilities.

7.2.3 Review of 10 CFR 72 - Sabotage, Theft and Diversion

10 CFR Part 72 is the Code of Federal Regulation which establishes the "requirements, procedures, and criteria for the issuance of licenses to receive, transfer, and possess power reactor spent fuel and other radioactive materials associated with spent fuel storage in an independent spent fuel storage installation (ISFSI) and the terms and conditions under which the Commission will issue such licenses, including licenses to the U.S. Department of Energy (DOE) for the provision of not more than 1900 metric tons of spent fuel storage capacity at facilities not owned by the Federal Government on January 7, 1983 for the Federal Interim storage program under subtitle B-Interim Storage Program of the Nuclear Waste Policy Act of 1982 (NWPA). The regulations in this part also establish requirements, procedures, and criteria for the issuance of licenses to DOE to receive, transfer, package, and possess power reactor spent fuel, high-level radioactive wastes, and other radioactive materials associated with spent fuel and high-level radioactive waste storage, in a monitored retrievable storage installation (MRS)."

Unlike 10 CFR 50 for production and utilization facilities, 10 CFR 72 provides no guidance on whether the effects of sabotage must or must not be considered in the design of the facilities for an ISFSI or a MRS. However, Subpart H of 10 CFR 72, describes a physical protection system which must follow the applicable requirements of 10 CFR 73.

10 CFR 72.24(o) states that for an application from DOE for an ISFSI or MRS, DOE will provide a description of the physical security plan for protection against radiological sabotage as required by 10 CFR 72 Subpart H - 'Physical Protection' and must include a certification that it will provide at the ISFSI or MRS such safeguards as it requires at a comparable surface DOE facilities to promote the common defense and security. As previously stated in the Review of 10 CFR 60, the guiding documents for the requirements of comparable DOE surface facilities do not include sabotage as an accident initiator and lead to the conclusion that sabotage as an accident initiator should not be considered in the preparation of PHAs for DOE facilities, eliminating it from the list of DBEs. The elimination of sabotage as a DBE is consistent with current practices at ISFSIs located at power reactor sites.

7.3 Separation of Security Submittals from the Safety Analysis Report

7.3.1 Review of 10 CFR 60 - Separation of Security Submittals

10 CFR 60.21 states that an application for a license shall consist of general information and a Safety Analysis Report. Included as part of the general information, and submitted separately from the SAR, is to be a description of the physical security plan for protection against radiological sabotage. 10 CFR 60.21 also requires that the general information section include, as a separate submittal from the SAR, a certification that DOE will provide at the geologic repository operations area such

safeguards as it requires at comparable surface facilities (of DOE) to promote the common defense and security. As previously stated, the NRC is proposing to amend its regulations to clarify safeguards requirements for spent nuclear fuel or high-level radioactive waste storage. This amendment does not, however, change the requirements for submitting safeguards information separately from the SAR in the license application. In fact, the proposed rule change (Reference 5.18) states, *"An additional revision to Part 60 relates to the nuclear material control and accounting program that is referred to in Sec. 60.21(c)(10). To the extent that this program relates to safeguards issues, it is more properly addressed as "general information" under Sec. 60.21(b) rather than as part of the Safety Analysis Report under Sec. 60.21(c). The proposed rule will accomplish this."*

These separation requirements, similar to the separation requirements for safeguards and security information for 10 CFR 50 licensed facilities discussed in Section 7.3.2, indicate that the safeguards and security information should be addressed in a separate, more appropriate submittal, containing the requirements of the facility's security design organization. Since it is anticipated that 10 CFR 60 facilities will refer to 10 CFR 73 in accordance with the proposed rule change, it can be concluded that safeguards and security information for the repository will be protected from unauthorized disclosure using a similar approach and methodology as previously established in 10 CFR 73.21 for 10 CFR 50 licensed facilities.

Likewise, utilizing the process for 10 CFR 50 facilities described in section 7.3.2, the security design organization for the repository should determine which design basis threats are to be considered with respect to the design of the safeguards and security system. This determination of design basis threats should be based on the requirements of 10 CFR 73 and should be outside the scope of the safety analysis process utilized in the design of important to safety SSCs. For this reason, no safety analyses are required for security events (*i.e.*, sabotage) which the safeguards and security system will be designed to prevent. This includes not requiring an analysis of the consequences of these events or the mitigative features of this system in relation to these events. In addition, sabotage does not have to be identified as a DBE to justify the existence of the safeguards and security system since the systems' existence is mandated by code (10 CFR 60). This argument is consistent with previous NRC licensing bases and is based on the premise that the safeguards and security system will be designed to prevent sabotage.

7.3.2 Review of 10 CFR 50 - Separation of Security Submittals

For power reactor sites, 10 CFR 50.34 describes the contents of the license application. In this section, the physical security plan and the safeguards contingency plan are listed separately from the SAR which is available for public review. The separation of the safeguards and security information from the safety analysis report indicates that the safeguards and security information should be addressed in a separate, more appropriate submittal, containing the requirements of the facility's security design organization. This separation is consistent with current practice at power reactor sites in which the security design organization determines which design basis threats are to be considered

for the safeguards and security system. This determination of design basis threats is based on the requirements of 10 CFR 73 and is outside the scope of the safety analysis process utilized in the designs of important to safety SSCs.

This separation criteria is also consistent with another statement made in section 50.34 which states that the safeguard contingency plan and the physical security plan shall be protected against unauthorized disclosure in accordance with the requirements of 10 CFR 73.21. 10 CFR 73.21 states that no person may have access to safeguards information unless the person has an established "need to know" for the information.

7.3.3 Review of 10 CFR 72 - Separation of Security Submittals

Under the contents of the license application (10 CFR 72.24), the physical security plan and the safeguards contingency plan are not separated from the SAR as they are in 10 CFR 60.21 and 10 CFR 50.34. However, 10 CFR 72.24 states that the design features and plans of the security measures to be used at an ISFSI or a MRS must follow the requirements of 10 CFR 72 Subpart H - 'Physical Protection' and, for a DOE facility, must be similar to the requirements used at a comparable DOE surface facility. Subpart H describes a physical protection system which must follow the applicable requirements of 10 CFR 73. One of these requirements is that no person may have access to safeguards information unless the person has an established "need to know" and satisfies the requirements of 10 CFR 73.21(c). This requirement conflicts with 10 CFR 72.24 which places the physical security plan and the safeguards contingency plan in the SAR whose distribution is not controlled by 10 CFR 73.21. Clearly, this issue can be resolved by separating the security material from the SAR as is done in 10 CFR 50 and 10 CFR 60.

NUREG-1497, which provides physical protection planning guidance acceptable for application and adaptation for ISFSIs and MRSs (and for the proposed geologic repository) states in Appendix A, Part A.5-Public Disclosure, that the *"NRC has determined that public disclosure of details of physical protection programs is not in the public interest, and such details are withheld in accordance with paragraph 2.790(d) of 10 CFR Part 2. Thus, the physical protection section of each application should be submitted as a separate enclosure."*

Additionally, in Appendix D of NUREG-1567 (Reference 5.13), the standard review plan for spent fuel dry storage facilities, it is stated that, since the SAR is not to be classified, its content shall be limited to information that is not required by 10 CFR 73.21 to be protected. Information which is required to be protected will be provided in a separate submittal with a limited distribution.

7.4 Comparison of the Treatment of the Safeguards and Security System

Table 1 summarizes some of the salient points in the treatment of the safeguards and security system for the three types of facilities considered in this analysis.

Table 1: Comparison of the Treatment of the Safeguards and Security System			
Item	10 CFR 50 Licensed Facility	10 CFR 72 Licensed Facility	10 CFR 60 Licensed Facility
The safeguards and security system is subject to 10 CFR 73 regulations.	x	x	x ¹
The licensing CFR explicitly states that the designs of facility features do not need to consider the effects of sabotage.	x		
Safeguards will be provided as required at comparable surface facilities (of DOE) to promote the common defense and security.		x ²	x ²
Theft and diversion are deleted as a consideration in the physical security plan.			x
The security plan and the safeguards plan are to be submitted separate from the SAR in the license application.	x	x ³	x
The security design organization determines which events are applicable to safeguards and security systems, including sabotage, separately from events postulated for the design of important to safety SSCs.	x		
The listed documents do not include sabotage as a design basis event with respect to the design of safety related structures, systems, and components.	NUREG/CR-2300 NUREG-0800 ANSI/ANS-2.12-1978	DOE Order 5480.23 DOE Standard 3009-94	DOE Order 5480.23 DOE Standard 3009-94

¹ As currently written, 10 CFR 60 does not require the security plan and safeguards plan to be based on 10 CFR 73. The proposed rule change will clarify the applicability of 10 CFR 73.

² The proposed rule change will clarify safeguards requirements for these facilities. The proposed rule change will delete the "comparable surface facilities (of DOE)" requirement. This line item is included to link the design of these facilities to DOE Order 5480.23 and DOE Standard 3009-94.

³ NUREG-1497 and the Standard Review Plan (NUREG-1567) for 10 CFR 72 facilities state that the safeguards and security plans are a separate submittal from the SAR.

8.0 CONCLUSIONS

From a review of 10 CFR 60, 10 CFR 50, 10 CFR 72, and other guidance documents, no definitive statement is made on the QA classification of the safeguards and security system. However, information provided in these documents support the conclusion that sabotage, theft, and diversion should be eliminated from the list of design basis events for important to safety SSCs at the MGDS. The removal of sabotage, theft and diversion from this list potentially removes the safeguards and security system from a QA-1 classification. The rationale for the questions in the classification analysis for the 'Safeguards Material Control and Accountability System' is improper based on the premise that security events should be addressed separately by the security design organization and should not be considered in the QA design process for important to safety SSCs. This argument is consistent with previous NRC licensing bases and based on the facts that the safeguards and security system will be designed to prevent sabotage and that the NRC has determined that public disclosure of details of physical protection programs is not in the public interest.

In summary, sabotage, theft, and diversion should be excluded as DBEs which may impact the design of important to safety SSCs for the MGDS based on the following arguments:

- 1) The exclusion of sabotage, theft, and diversion as DBEs is supported by the licensing documents, other guidance documents, and previous precedent as established at 10 CFR 50 licensed facilities.
 - 10 CFR 60 eliminates theft and diversion from consideration in safeguards and security system design,
 - DOE Order 5480.23 and DOE Standard 3009-94, which provide guidance with respect to DOE non-reactor facilities (comparable DOE surface facilities), specifically exclude sabotage as a design basis event with respect to the design of safety-related SSCs,
 - 10 CFR 50 states that the design of facility features do not need to consider the effects of sabotage,
 - NUREG-CR/2300, the PRA guide for nuclear power plants, does not list sabotage as a DBE that must be considered in a risk assessment, and
 - NUREG-0800 and ANSI/ANS-2.12-1978, which provide guidance with respect to postulated events to be considered in nuclear power plant design, do not include sabotage as a design basis event with respect to the design of safety-related SSCs.
- 2) The security plan and safeguards plan are to be submitted separately from the SAR in the license application. This separation of safeguards and security information from the SAR

indicates that design basis threats used in safeguards and security system design, including sabotage, should be addressed in a separate, more appropriate submittal containing the requirements of the facility's security design organization.

- 10 CFR 60 and 10 CFR 50 specifically state that the security plan and safeguards plans are to be submitted separately from the SAR in the license application,
- At 10 CFR 50 licensed facilities, the security design organization determines which events are applicable to safeguards and security systems, including sabotage, separately from events postulated for the design of important to safety SSCs,
- NUREG-1497, which provides physical protection planning guidance acceptable for application and adaptation for 10 CFR 72 facilities, states that the *"NRC has determined that public disclosure of details of physical protection programs is not in the public interest, and such details are withheld in accordance with paragraph 2.790(d) of 10 CFR Part 2. Thus, the physical protection section of each application should be submitted as a separate enclosure,"* and
- NUREG-1567, the Standard Review Plan for Part 72 facilities, states that since the SAR is not to be classified, its content shall be limited to information that is not required by 10 CFR 73.21 to be protected. Information which is required to be protected will be provided in a separate submittal with a limited distribution.

9.0 ATTACHMENTS

Not Applicable.