ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT ON PROPOSED AMENDMENT TO 10 CFR PART 72 "LIST OF APPROVED SPENT FUEL STORAGE CASKS: FUELSOLUTIONS™ CASK SYSTEM REVISION 4"

Office of Nuclear Material Safety and Safeguards

U.S. Nuclear Regulatory Commission (NRC)

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I. THE PROPOSED ACTION

The proposed action is to amend 10 CFR Part 72 to revise the BNG Fuel Solutions FuelSolutions™ cask system listing within the 10 CFR Part 72 "List of approved spent fuel storage casks" to include Amendment No. 4 to the Certificate of Compliance (CoC). Amendment No. 4 would modify the present cask system design to permit a Part 72 licensee to store spent fuel in the cask under the revised conditions under a general license. The amendment would revise Technical Specification (TS) requirements related to periodic monitoring during storage operations. Specifically, the amendment would revise TS to permit longer surveillance intervals for casks with heat loads lower than the design basis heat load and permit visual inspection of the cask vent screens or measurement of the cask liner temperature to satisfy the periodic monitoring requirements that govern general design criteria for spent fuel storage casks. TS 3.3.1 would be deleted to remove daily monitoring requirements. TS 3.3.2 would be revised for the W21 and W74 canisters to permit either visual inspection of vent

screens or liner thermocouple temperature monitoring. Also, TS 5.3.8 would add a section for the Periodic Monitoring Program which establishes intervals for periodic monitoring that are less than the time required to reach the limiting short-term temperature limit. This program would establish administrative controls and procedures to assure that the licensee will be able to determine when corrective action is required. In addition, the amendment would update editorial changes associated with the company name change from BNFL Fuel Solutions Corporation to BNG Fuel Solutions Corporation and make other administrative changes. The cask can be relied on to provide safe confinement of spent fuel at any reactor site when used in accordance with the CoC. To use an NRC-approved cask system, the reactor licensee must ensure that the reactor site parameters and potential site-boundary doses are within the scope of the cask system safety analysis report and reactor license.

II. THE NEED FOR THE PROPOSED ACTION

This rulemaking is needed to revise a cask system listing within the "List of approved spent fuel storage casks" in 10 CFR 72.214. On June 30, 2005, the certificate holder, BNG Fuel Solutions Corporation, submitted an application to the NRC to amend CoC No. 1026 to modify the TS requirements related to periodic monitoring during storage operation. Specifically, the application requested TS changes to permit longer surveillance intervals for casks with heat loads lower than the design basis heat load and permit visual inspection of the cask vent screens or measurement of the cask liner temperature to satisfy the periodic monitoring requirements of 10 CFR 72.122(h)(4). TS 3.3.1 will be deleted to remove daily monitoring requirements. TS 3.3.2 will be revised for the W21 and W74 canisters to permit either visual inspection of vent screens or liner thermocouple temperature monitoring. Also, TS 5.3.8 will add a section for the Periodic Monitoring Program which establishes intervals for

periodic monitoring that are less than the time required to reach the limiting short-term temperature limit. This program will establish administrative controls and procedures to assure that the licensee will be able to determine when corrective action is required. In addition, the application requested that the amendment update editorial changes associated with the company name change from BNFL Fuel Solutions Corporation to BNG Fuel Solutions Corporation and make other administrative changes. No other changes to the FuelSolutions™ cask system design were requested in this application. The staff performed a detailed safety evaluation of the proposed CoC amendment request and found that an acceptable safety margin is maintained. In addition, the staff has determined that there continues to be reasonable assurance that public health and safety and the environment will be adequately protected.

III. ENVIRONMENTAL IMPACTS OF PROPOSED ACTION

The potential environmental impact of using the FuelSolutions™ cask system was initially presented in the Environmental Assessment for the final rule to add the FuelSolutions™ cask system to the list of approved spent fuel storage casks in 10 CFR 72.214 (66 FR 3444; January 16, 2001). Furthermore, each general licensee must assess the environmental impacts of the specific Independent Spent Fuel Storage Installation (ISFSI) in accordance with the requirements of 10 CFR 72.212(b)(2)(iii). This section requires the general licensee to perform written evaluations to demonstrate compliance with the environmental requirements of 10 CFR 72.104, “Criteria for radioactive materials in effluents and direct radiation from an ISFSI or MRS [Monitored Retrievable Storage Installation].”

FuelSolutions™ cask systems are designed to mitigate the effects of design basis accidents that could occur during storage. Design basis accidents account for human-induced

events and the most severe natural phenomena reported for the site and surrounding area. Postulated accidents analyzed for an ISFSI include tornado winds and tornado-generated missiles, design basis earthquake, design basis flood, accidental cask drop, lightning effects, fire, explosions, and other incidents.

Considering the specific design requirements for each accident condition, the design of the cask would prevent loss of containment, shielding, and criticality control. Without the loss of either containment, shielding, or criticality control, the risk to public health and safety is not compromised.

The staff reviewed the proposed changes and confirmed that the changes provide reasonable assurance that the spent fuel can be stored safely and that the changes meet the acceptance criteria specified in 10 CFR Part 72. The staff documented its findings in a Safety Evaluation Report.

The occupational exposure is not significantly increased, and offsite dose rates remain well within the 10 CFR Part 20 limits. Therefore, the proposed action now under consideration would not change the potential environmental effects assessed in the initial rulemaking. Therefore, the NRC staff has determined that an acceptable safety margin is maintained and that no significant environmental impacts occur as a result of the amendment. Because the proposed changes will not change the environmental requirements for the storage of spent fuel, no change in environmental impact is anticipated.

IV. ALTERNATIVE TO THE PROPOSED ACTION

The alternative to the proposed action would be to deny approval of the amendment.

V. ALTERNATIVE USE OF RESOURCES

There were no irreversible commitments of resources determined in this assessment.

VI. AGENCIES AND PERSONS CONTACTED

No agencies or persons outside the NRC were contacted in connection with the preparation of this environmental assessment.

VII. FINDING OF NO SIGNIFICANT IMPACT

The environmental impacts of the proposed action have been reviewed under the requirements in 10 CFR Part 51.

Based on the foregoing environmental assessment, the NRC concludes that this rulemaking entitled "List of Approved Spent Fuel Storage Casks: FuelSolutions™ Cask System Revision 4" will not have a significant effect on the quality of the human environment. Therefore, the NRC has determined that an environmental impact statement is not necessary for this rule.

Certain documents related to this rulemaking, including comments received by the NRC, may be examined at the NRC Public Document Room, 11555 Rockville Pike, Rockville, MD. These same documents may also be viewed and downloaded electronically via the rulemaking website (http:\\ruleforum.llnl.gov).