November 30, 2009

Mr. Ashok S. Bhatnagar
Senior Vice President
Nuclear Generation Development
and Construction
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 – REQUEST FOR ADDITIONAL INFORMATION REGARDING SEVERE ACCIDENT MANAGEMENT ALTERNATIVES (TAC NO. MD8203)

Dear Mr. Bhatnagar:

In a letter dated January 27, 2009, to the U.S. Nuclear Regulatory Commission (NRC), the Tennessee Valley Authority provided the Severe Accident Management Alternatives analysis report for Watts Bar Nuclear Plant, Unit 2.

The NRC staff has reviewed your submittal and finds that additional and clarifying information is needed to complete our review. The specific information needed is detailed in the enclosure. The responses are required 30 days from the date of this letter. If your response cannot be submitted in 30 days, provide a date when your response will be submitted.

If you should have any questions, please contact me at 301-415-6606 or Joel.Wiebe@nrc.gov.

Sincerely,

/RA/

Joel S. Wiebe, Senior Project Manager
Watts Bar Special Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure:
Request for Additional Information

cc: Distribution via Listserv

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DATE	09/ 24 /09	09/ 24 /09	10/ 02 /09	11/ 30 /09

OFFICIAL AGENCY RECORD

REQUEST FOR ADDITIONAL INFORMATION

SEVERE ACCIDENT MANAGEMENT ALTERNATIVES ANALYSIS

WATTS BAR NUCLEAR PLANT UNIT 2

DOCKET NO. 50-391

1. Provide the following information regarding the Probabilistic Risk Assessment (PRA) used for the Severe Accident Mitigation Alternative (SAMA) analysis:

    a. Provide a breakdown of the internal event core damage frequency (CDF) by initiating event (including internal floods) that equals the total internal events CDF reported in the submittal. Provide the contribution from station blackout and anticipated transient without scram events if not separately provided in this listing.

    b. Describe the evolution of the Watts Bar Nuclear Plant (WBN) Level 1 and Level 2 PRA from the original Individual Plant Examination (IPE) submittal to the version used for the SAMA analysis. For each version of the PRA, provide the date, the CDF and large early release frequency (LERF), if calculated, and a summary description of the major changes that resulted in the increase/decrease in CDF and LERF relative to the prior version.

    c. Identify any physical or procedural modification changes to Unit 1 since the release of Revision 4 of the PRA could have a significant impact on the results of the Unit 2 PRA or SAMA analysis. Provide a qualitative assessment of their impact on the PRA and on the results of the SAMA analysis.

    d. Provide a description of any differences in the designs of Unit 1 and Unit 2 that are expected to exist at the time Unit 2 begins operation. Discuss the estimated impact of these differences on CDF, release frequencies, and the results of the SAMA analysis.

    e. It is stated in Section 4.1 that as a result of discussions with Sequoyah personnel, two PRA model changes were made, and that following a review of the various shared systems with the Sequoyah model, no further model changes related to shared systems were identified as necessary for the Unit 2 SAMA model.

        i. Identify the shared systems at WBN.

        ii. Discuss the modeling of shared systems in the SAMA model.

        iii. Discuss the modeling of dual unit initiating events, including the status of the other unit.

Enclosure

iv. Clarify the relevance to Unit 2 of the first mentioned change, that is, "Changes to the component cooling water system (CCS) to remove credit for the Unit 2 pumps from the Unit 1 model to reflect dual unit operation."

f. Provide a description of the Tennessee Valley Authority (TVA) processes for Level 1 and 2 PRA updates, quality control of PRA model changes, and independent review and approval of PRA model update documentation. Include a discussion of the scope, review criteria, and results of any independent reviews of the Level 1 and/or the Level 2 models other than that by the Westinghouse Owners Group (WOG), including any internal or external reviews against the American Society of Mechanical Engineers (ASME) PRA standard (ASME RA-Sc-2007) or Nuclear regulatory Commission (NRC) Regulatory Guide 1.200.

g. Provide the date of the WOG peer review, the PRA model revision reviewed, and the overall results of the review as stated in the peer review report.

h. Table 2 of the SAMA Analysis Report provides the resolution status of the Level A and B WOG peer review Facts and Observations (F&Os). Provide additional justification for the adequacy of the resolution of the following F&Os:

i. SY-08 – This F&O raises a question concerning the applicability of the emergency diesel generator (EDG) repair times to WBN. The resolution states that documentation of the basis is not necessary for the SAMA analysis. Justify the EDG repair times used in the SAMA model or that they would not impact the results of the SAMA analysis.

ii. DE-02 – This F&O discusses the adequacy of the internal flooding analysis. The F&O notes that portions of the analysis are based on engineering judgment or are not supported, and recommends a number of actions including reviewing the analysis against RI-ISI and HELB/MELB analyses. (The 2001 WBN RI-ISI submittal indicates a CDF of 4.6E-05 per year for pipe failures in Class 1 and 2 systems.) The resolution does not address these recommendations. Justify that the issues raised in the F&O would not impact the results of the SAMA analysis.

iii. HR-01 and HR-15 – These F&Os question the treatment of human action dependencies. The resolution indicates that a sensitivity study was performed wherein operator actions were set to guaranteed failure and the resulting top 50 sequences were reviewed to identify necessary model changes. Based on this review, a number of top events were set to guaranteed failure. Justify that review and treatment of the top 50 sequences is sufficient to uncover all significant human actions that could be impacted by potential SAMAs. Explain how setting certain top events to guaranteed failure properly treats dependent human actions and does not hide important actions that might be the source of a potential SAMA.

iv. HR-11 – This F&O raises an issue regarding the consistency of time estimates used in establishing the human error probabilities (HEPs). The resolution: indicates that the human reliability analysis (HRA) was updated to use the Electric Power Research Institute HRA calculator, specifically addresses the two operator actions mentioned in the F&O, and states that the F&O can be considered closed if the revised time windows for these two operator actions are used. Provide additional information regarding the statement that shortening the time window for bleed and feed (from 30 to 10 minutes with only a safety injection pump available) does not change the resulting HEPs. Justify why the time windows for additional operator actions should not be reconsidered consistent with this F&O recommendation, and why this would not impact the results of the SAMA analysis, that is, the identification of additional SAMAs involving procedure improvements.

v. L2-03 and L2-05 – These F&Os note that the Level 2 analysis does not include operator actions and that the reliance on NUREG-1150 analyses could impact the Level 2 results. The resolution for both F&Os indicates that the current model results in a conservative offsite consequence and maximum possible benefit. However, inclusion of operator actions in the Level 2 model or updating the model to reflect recent research information could conceivably lead to the identification of additional candidate SAMAs, particularly enhancements to procedures and guidance to improve operator response following core damage. Identify key operator actions that are amenable to treatment within the Level 2 analysis, and discuss their potential impact on the results of the Level 2 and SAMA analysis. Provide an assessment of potential SAMAs related to these actions.

vi. TH-06 and TH-10 – These F&Os question the bases for the success criteria used for small LOCA and bleed and feed. The resolution indicates that success criteria analyses were performed for the WBN Unit 2 PRA. Describe the scope of the analyses, the computer code(s) used, and the results of these analyses.

vii. TVA-001, TVA-002 and TVA-11 – These F&Os appearing in Table 2 are apparently from an internal self-assessment rather than the WOG peer review. Discuss the source of these items and identify any other items from this source that might be relevant to judging the quality of the SAMA PRA.

i. In the discussion of the individual F&Os on page 5, the last bullet mentions a potential change to the SAMA model associated with ventilation system recovery. However, a model change involving ventilation system recovery is not identified in Table 2. Confirm whether the ventilation system recovery change was made in the SAMA model.

2. Provide the following information relative to the Level 2 PRA analysis:

   a. The Level 2 PRA is stated to utilize containment event trees (CETs) developed for the individual plant examination (IPE). The IPE utilized 26 plant damage states (PDSs) that were later collapsed into 10 key PDSs based on PDS frequency and the IPE guidance document reporting requirements. Clarify if this same process was applied for the SAMA analysis. If not, discuss how the process was performed for the SAMA Level 2 model, the general results of the analysis, and the impact on release category frequencies and source terms.

b. It is stated in Section 4.6.4 that the CET nodes and split fractions of NUREG-1150 were reviewed to assure that the consequences in terms of release frequencies would be larger than would be expected with an updated Level 2 model. Provide additional discussion of how this was done, what adjustments were made, if any, and the source of any updated values.

c. Section 4.2 states that the release categories were retained from the IPE Level 2 model and the binning of release categories (RCs) into four categories was also retained from the IPE. RC II is defined in the IPE update as small early containment failures and small bypasses, including steam generator tube rupture (SGTR) events. However, the iodine release fraction for RC II in the SAMA analysis (Table 7) is 0.21, which is not "small." Table 4.2-1 of the IPE update indicates that the frequency of RC II is 10 percent of the update CDF. However, the frequency of RC II in the SAMA submittal (Table 3) is less than 1 percent of the SAMA CDF. Discuss the development of RC II and why its magnitude and frequency is significantly different from the IPE.

d. Section 4.6.4 refers to the "WBN2 Level 2 model." Describe this model and how it differs from the IPE (Unit 1) Level 2 model. Clarify whether the "WBN2 Level 2 model" is the Level 2 portion of the WBN4SAMA model.

e. Tables 4 through 8 references a 2007 analysis by Science Applications International Corporation (SAIC) entitled "Watts Bar Nuclear Plant Severe Reactor Accident Analysis." Describe the relationship between the SAIC analysis, the "WBN2 Level 2 model," and the Level 2 portion of the WBN4 SAMA model, and how the release characteristics used in the SAMA analysis were developed. Provide a copy of the SAIC report.

f. The radionuclide release characteristics (I and Cs release fractions, release time and release duration) provided in Tables 6 and 7 of the SAMA submittal are, for some release categories, significantly different from those given for Sequoyah in Table 3.10 of NUREG/CR-6295. Discuss the reasons for these differences and justify the values used in the SAMA analysis.

3. Provide the following information regarding the treatment of external events in the SAMA analysis:

   a. The NRC staff safety evaluation report (SER) on the Unit 1 Individual Plant Examination of External Events (IPEEE) noted two issues under the Multiple System Response Program (MSRP/GSI [Generic Safety Issue]-172) for which the staff could not find complete information in the licensee submittal. The first issue was non safety-related control system/safety-related system dependencies; the second was the effect of flooding and/or moisture intrusion for nonsafety-related equipment. Describe the resolution of these two issues for Unit 1 and the implications for the Unit 2 SAMA analysis.

   b. The Unit 1 IPEEE provides the fire CDF for the dominant fire areas. All fire areas have a fire CDF less than 1.0E-06 per year. Clarify whether any fire areas at Unit 2 are expected to be substantially different than those reported for Unit 1 and describe the reasons for any differences.

c. TVA used an external events multiplier of 2.0 in the SAMA analysis based on a review of other SAMA analyses. This multiplier could be considerably higher based on the plant-specific seismic and fire CDF. The NRC staff notes that the WBN seismic CDF would be about 5E-05 per year using the simplified hybrid method for estimating seismic CDF (Kennedy, R. P., 1999 “Overview of Methods for Seismic PRA and Margin Analysis Including Recent Innovations”, Proceedings of the OECD-NEA Workshop of Seismic Risk, Tokyo, Japan 10-12 August 1999), the latest U.S. Geological Survey seismic hazard curve, and a WBN plant fragility (high confidence low probability of failure) of 0.36g. Use of this seismic CDF in conjunction with the IPEEE fire CDF of 7E-06 per year would result in an external events multiplier of 4.7. Provide an assessment of the impact on the Phase I and II SAMA results (baseline and baseline with uncertainty) based on an external events multiplier of 4.7, or justification for use of a lower multiplier. This assessment can be limited to internal event SAMAs that could have significant benefits in external events.

4. Provide the following information relative to the Level 3 PRA analysis:

   a. Identify the computer programs and databases used to determine the population distribution described in Section 4.6.2. Provide additional information on how the population growth rates and the transient population data were developed, including the source of the transient population estimate and how the growth rate estimates were applied.

   b. Identify the version of the SECPOP2000 code used to develop the economic data for the area surrounding the WBN site. If the calculations are not based on Version 3.13.1 of the SECPOP2000 code, confirm that all three recently discovered problems in earlier versions of SECPOP2000 have been accounted for in preparing the WinMACCS2 code input for WBN (i.e., a formatting problem in input block text files), an error in formatting the economic database used by SECPOP2000, and gaps in the economic database file. Also provide a discussion of the escalation factors applied to account for changes from the date of the data source to the present.

   c. Crop production parameters (e.g., fraction of farmland devoted to grains, vegetables, etc.) are stated to have come from the SECPOP2000 for which the crop production parameters are based on 1997 National Census of Agriculture. Discuss why information on regional crops was not based on the more up-to-date 2002 Census of Agriculture, and any important differences between these two sources.

   d. Provide the basis for the radionuclide inventory provided in Table 5, including the time in the fuel cycle on which the inventory is based, the computer code utilized to estimate the inventory, and the assumed core power level and burnup. Confirm that this core inventory reflects the expected fuel management/burnup during the license period.

   e. Identify the source of the meteorological data used in the MACCS2 code (e.g., the onsite meteorology tower). Describe the process used to fill in the gaps for any data missing from the site instrumentation.

f. Discuss how precipitation is modeled in the MACCS2 analysis, including the source of the precipitation data, and any assumptions for applying the data (such as forced rain events in the outermost radial ring.

5. Provide the following information with regard to the selection and screening of Phase I SAMA candidates:

   a. Section 6.2 of the SAMA submittal discusses 12 potential enhancements and insights/recommendations from the original Unit 1 IPE, each of which was included as a candidate SAMA. Section 6.4 of the Unit 1 IPE submittal update includes 13 different additional insights and recommendations. Describe the status of these additional items. For those items that have not been implemented, justify not considering the items as Phase I SAMAs.

   b. The 1994 Unit 1 Severe Accident Mitigation Design Alternative (SAMDA) analysis identified 31 potential enhancements that were subjected to further analyses (26 identified by TVA plus 5 identified by NRC staff). While some are included in the current Phase I SAMA list, many are not. Describe the status of each these enhancements. For those items that have not been implemented or have not been included on the Phase I SAMA list, justify not considering the items as Phase I SAMAs.

   c. The basic event CDF importance list in Table 13 only includes four items with a risk reduction worth (RRW) greater than 1.02. Also, no initiating events are included on this list. Discuss the development of this list and why it is limited to only four items.

   d. It is stated in Section 6.4 that the systems and basic events that have an RRW of greater than 1.02 for CDF or LERF were reviewed to identify potential SAMAs. For each basic event and system in the importance lists (Tables 11 through 14) indicate the SAMA(s) identified to mitigate the event. For any basic events and systems not addressed by a specific SAMA justify why no such SAMAs were considered.

   e. The Unit 1 IPEEE (Table 3.1.4-1) identifies the high confidence low probability of failure (HCLPF) values for a number of components which could not be screened out. For those items with HCLPF values below approximately 0.7g (the value corresponding to a seismic CDF approximately equal to the internal events CDF) identify potential SAMAs that might address the limiting failure mode, and justify why these SAMAs should not be considered further. In assessing the feasibility of implementing a SAMA at Unit 2 include consideration of the status of construction or modification of the affected structures or components at Unit 2.

   f. The Unit 1 IPEEE fire PRA identified a number of fire-initiated core damage sequences with a CDF greater than 3E-07 per year (the equivalent of the RRW screening criteria of 1.02 used in the selection of SAMA candidates from the Unit 2 internal events PRA). For each of these fire sequences, identify potential SAMAs that might reduce the fire risk either individually or as a group, and justify why these SAMAs should not be considered further.

   g. The description of the Phase I screening criteria in Section 7 implies that in order for an item to be screened out as “already implemented” it must be implemented and accounted for in the PRA model. The majority of the SAMA candidates identified through the RRW review (listed in Table 15) were screened out as "already implemented." If these SAMA candidates were accounted for in the PRA, then the failure they address must still be important enough to have been identified in the RRW review. For each of the items in Table 15 screened out as "already implemented" (i.e., SAMAs 3, 12, 75, 157, 198, 244, 257, 271, 272, 275), identify additional SAMA candidates that would address the failure and provide a further evaluation of these SAMAs.

h. Provide further information on the basis for the disposition of the following SAMAs in Table 16:

   i. SAMA 3, provide a diesel-driven battery charger, is considered already implemented on the basis that two spare chargers are available. Spare chargers are not equivalent to a portable diesel driven charger. Further justify the screening of this SAMA, or provide a Phase II evaluation.

   ii. SAMA 5, provide DC bus cross-ties, is considered to have very little benefit due to existing cross-tie capabilities. This conclusion is not obvious without additional information on the potential benefits and costs. Also, this system/SAMA does not meet the criteria for screening based on very low benefit (which is that it is a nonrisk significant system). Further justify the screening of this SAMA, or provide a Phase II evaluation.

   iii. For a number of SAMAs (e.g., SAMAs 16, 65, 275 and 281), it is indicated that design changes are in process or actions will be taken. Confirm that TVA is committed to these design changes and actions, and describe these commitments.

   iv. SAMA 19, use fire water system as backup source for diesel cooling, was screened on the basis that the opposite train of emergency raw cooling water (ERCW) is available as a backup. Since the ERCW provides both the primary and backup cooling and is subject to common cause failures, it is not equivalent to using the fire water system, which adds a diverse method of cooling. Further justify the screening of this SAMA, or provide a Phase II evaluation.

   v. SAMA 29, provide capability for alternate injection via diesel-driven fire pump, is considered to be of minimal benefit since it does not provide a recirculation path and is considered cost-prohibitive relative to the potential benefit. This conclusion is not obvious without additional information on the potential benefits and costs. Further justify the screening of this SAMA, or provide a Phase II evaluation.

   vi. SAMA 42, procedure change for reactor coolant system depressurization, was not subjected to a cost-benefit analysis since emergency operating procedures are processed through the owner's group emergency response guideline (ERG) maintenance process. This is not a valid reason for screening. If procedure change is cost beneficial and desirable, it should be pursued through the ERG maintenance process. Further justify the screening of this SAMA, or provide a Phase II evaluation.

vii. SAMA 48, cap downstream piping of normally closed component cooling water (CCW) drain and vent valves, is considered already implemented but the comment does not indicate that caps are in place. Rather, it states that failure of the drain or vent valve to remain closed is less likely than failure of the socket weld connection itself. Provide the basis for the latter statement.

viii. SAMA 53, shed CCW loads upon loss of ERCW, is considered to have little benefit since this affects recovery of ERCW and the PRA takes no credit for ERCW recovery. If load shedding can improve the probability of recovering ERCW then the benefit might be important, particularly since loss of ERCW is an important contributor to risk. Further justify the screening of this SAMA, or provide a Phase II evaluation.

ix. SAMA 54, increase charging pump lube oil capacity, is considered already implemented on the basis that alternate cooling is available to the WBN A charging pump. The SAMA would benefit the A pump even with the added cooling and the B charging pump that apparently does not have the added cooling. Further justify the screening of this SAMA, or provide a Phase II evaluation.

x. SAMA 58, install improved reactor coolant pump (RCP) seals, was not subjected to a cost-benefit analysis since the cost for a new design by Westinghouse is not available and this SAMA is not under TVA control. Southern Nuclear Company estimated the cost of installation of an improved RCP seal for Westinghouse reactors to be about $1M for the Vogtle Electric Generating Plant (VEGP) (see VEGP Units 1 and 2 License Renewal Application Environmental Report). Considering this cost estimate, further justify the screening of this SAMA, or provide a Phase II evaluation.

xi. SAMA 64, manually align the fire water system to the CCW system, is considered already implemented on the basis that ERCW is available to provide cooling to the residual heat removal system. It would appear that use of the fire water system would provide additional benefit for loss of ERCW. Further justify the screening of this SAMA, or provide a Phase II evaluation.

xii. SAMA 74, provide hookup for portable generators to power the turbine-driven auxiliary feedwater (AFW) pump after battery depletion, is considered already implemented on the basis an extra battery and an alternate power supply for the battery charger are already available. An independent source of power to control the turbine-driven AFW pump would appear to have a benefit beyond that provided for at WBN. Further justify the screening of this SAMA, or provide a Phase II evaluation.

xiii. SAMA 80, provide a redundant train or means of ventilation, is considered to have very low benefit based on current provisions for compensatory ventilation and plant modifications that are in progress. However, the ventilation system has a RRW of > 1.02, and does not meet the criteria for screening based on very low benefit (which is that it is a nonrisk significant system.). Further justify the screening of this SAMA, or provide a Phase II evaluation.

xiv. SAMA 111, install additional pressure or leak monitoring instruments for detection of interfacing system loss-of-coolant accidents (ISLOCAs), is considered already implemented on the basis that instrumentation and procedures for responding to an ISLOCA are in place. However, the intent of this SAMA is to add instruments that would give a warning of a potential ISLOCA. Further justify the screening of this SAMA, or provide a Phase II evaluation.

xv. SAMA 262, provide connections from the "B" centrifugal charging pump to the ERCW system, is considered to have very low benefit based on an evaluation. In Section 6.2.2, a CDF decrease of 4 percent is given for this SAMA. The disposition of this SAMA is not in accord with the criteria for screening based on a very low benefit, which requires the item to involve a nonrisk significant system. Further, this SAMA is listed in Table 15 as having been identified from the RRW review. Provide the results of a Phase II evaluation for this SAMA.

6. Provide the following information with regard to the Phase II cost-benefit evaluations:

a. Provide a brief description of the process used to develop the cost estimates for implementing the Phase II SAMAs. Identify the cost factors that are included in the cost estimates. Clarify whether the cost estimates include: lifetime testing and maintenance costs, contingency costs associated with unforeseen implementation obstacles, or inflation.

b. Provide the percent change in the population dose risk and offsite economic cost risk for each Phase II SAMA so that the benefits presented can be confirmed.

c. As indicated in the operating license SER, TVA will align the licensing and design bases on the WBN Units 1 and 2 to the fullest extent practicable. Thus, any changes made as a result of the Unit 2 SAMA analysis would be expected to also be made in Unit 1. As a result, the "per unit" cost of implementing certain SAMAs would be less than if implemented on only a single unit. This could significantly impact the cost for certain SAMAs (e.g., procedure changes). Identify the SAMAs that might be implemented on both units and discuss the impact of sharing the implementation costs on the results of the cost benefit analysis for Unit 2.

d. The benefit for SAMA 8, "Increase training on response to loss of two 120V AC buses which causes inadvertent actuation signals," was estimated by eliminating the consequences of each of the single bus initiating events. Presumably this was done because the model did not include a two bus failure initiating event. Confirm that the loss of two bus initiating event would have similar or less impact then the loss of the single buses individually.

e. The description of SAMA 46, "Add a service water pump," indicates that an alternate pump exists that could be temporarily connected to the ERCW, and that a permanent diesel-driven 10,000 gpm pump could be installed at the intake pumping station flush connection to the

f. ERCW. It is not clear which of these two options was evaluated. Clarify and provide an assessment of both options.

g. The enhancement evaluated for SAMA 156, "Eliminate RCP thermal barrier dependence on CCW such that loss of CCW does not result directly in core damage," was a procedure change that was found to be cost-beneficial based on a bounding assumption that RCP seal injection is always successful when AC power is available. However, a procedure change would not realistically provide this level of risk reduction. Discuss whether there is another enhancement (hardware modification) that might be more effective in reducing the risk than a procedure change and still cost effective.

h. For a number of the Phase II SAMAs evaluated in Section 8, the information provided does not sufficiently describe the associated modifications and what is included in the cost estimate. Provide a more detailed description of both the modification and the cost estimate for Phase II SAMAs 32, 56, 87, 273, and 280.

7. Provide the following information with regard to the sensitivity and uncertainty analyses:

   a. Provide an assessment of whether any of the Phase I SAMAs screened due to excessive implementation costs or very low benefit should be retained for a Phase II evaluation based on the 95th percentile results for CDF and LERF. Provide a Phase II evaluation for any retained SAMAs.

   b. Provide the dollar benefit value for each of the Phase II SAMAs using the 3 percent discount rate.

8. For certain SAMAs considered in the SAMA submittal, there may be lower-cost alternatives that could achieve much of the risk reduction at a lower cost. In this regard, provide an evaluation of the following SAMAs:

   a. Purchasing or manufacturing a "gagging device" that could be used to close a stuck-open steam generator safety valve for a SGTR event prior to core damage.

   b. Utilizing the spare fifth diesel generator mentioned in the disposition of SAMA 261 without going through the expense of complete refurbishing and licensing.

   c. Providing procedures and cabling to enable the use of the trailer-mounted 2 MW diesel generator provided in response to GSI-189 to be used to power selected equipment such as battery chargers, and/or individual pumps.

   d. Purchasing and installing a permanent diesel-generator to supply power to the normal charging pump.