Constellation Energy
Nine Mile Point Nuclear Station

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December 29, 2004
NMP1L 1906

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

SUBJECT: Nine Mile Point Unit 1
Docket No. 50-220
Facility Operating License No. DPR-63

Submittal of Nine Mile Point Unit 1 Preliminary Decommissioning Cost Estimate

Gentlemen:

Nine Mile Point Nuclear Station, LLC (NMPNS) hereby submits a preliminary decommissioning cost estimate for Nine Mile Point Unit 1 (NMP1), in accordance with Section (f)(2) of 10 CFR 50.75, "Reporting and recordkeeping for decommissioning planning," which requires power reactor licensees to submit, at or about 5 years prior to the projected end of operations, a preliminary decommissioning cost estimate that includes an up-to-date assessment of the major factors that could affect the cost to decommission. In a letter dated September 30, 2004, NMPNS committed to provide this estimate by December 31, 2004. The preliminary decommissioning cost estimate is provided as Attachment 1. Although NMPNS is seeking license renewal for NMP1, this cost estimate is being submitted based on the current NMP1 operating license expiration date of August 22, 2009. If license renewal for NMP1 is granted, this preliminary decommissioning cost estimate would no longer be applicable and a new estimate will be submitted in accordance with 10 CFR 50.75(f)(2).

Very truly yours,

Timothy J. O'Connor
Plant General Manager

TJO/RF/jm

A001

Attachment 1:
Nine Mile Point Unit 1 Preliminary Decommissioning Cost Estimate

cc: Mr. S. J. Collins, NRC Regional Administrator, Region I
Mr. G. K. Hunegs, NRC Senior Resident Inspector
Mr. P. S. Tam, Senior Project Manager, NRR (2 copies)

ATTACHMENT 1

Nine Mile Point Unit 1

Preliminary Decommissioning Cost Estimate

I. Introduction

This report presents a summary of the preliminary estimate of the cost to decommission Nine Mile Point Unit 1 (NMP1), as required by 10 CFR 50.75(f)(2). This cost estimate is premised on the assumption that the plant permanently ceases to operate at the expiration of the current operating license; i.e., on August 22, 2009. The estimate assumes the eventual removal of all contaminated and activated plant components and structural materials, such that the Nine Mile Point Nuclear Station, LLC (NMPNS) operating license may be terminated to permit unrestricted use of the site. Although NMPNS is seeking license renewal for NMP1, this cost estimate is being submitted based on the current NMP1 operating license expiration date of August 22, 2009. If license renewal for NMP1 is granted, this preliminary decommissioning cost estimate would no longer be applicable and a new estimate will be submitted in accordance with 10 CFR 50.75(f)(2).

This estimate considered the guidance in Draft Regulatory Guide DG-1085, "Standard Format and Content of Decommissioning Cost Estimates for Nuclear Power Reactors," and the "Standard Review Plan for Decommissioning Cost Estimates for Nuclear Power Reactors," NUREG-1713, December 2004.

II. Comparison of the Preliminary Cost Estimate to the Minimum Required Decommissioning Fund

The minimum decommissioning financial assurance requirement, as calculated to November 2004 Bureau of Labor Standards indices and derived per the algorithm set forth in 10 CFR 50.75(c) for NMP1, is approximately $421 million based on data for NRC adjustment factors through November 2004. The preliminary decommissioning cost estimate, as set forth in Table 1, is approximately $719 million in 2004 dollars. As demonstrated in Tables 1 and 2, assuming a period of SAFSTOR of 49 years, this estimate is greater than the NRC minimum decommissioning financial assurance amount.

III. Assessment of Major Factors That Could Affect Preliminary Cost Estimate

A. Decommissioning Option/Method

This preliminary cost estimate was developed utilizing a modified SAFSTOR decommissioning option. In this scenario, the plant will initially be placed in a safe, stable condition and maintained in that state (safe storage). During the first two years of decommissioning, all spent fuel will be discharged to the spent fuel pool located within the NMP1 Reactor Building, and shall remain there until it can be transferred to a suitable Department of Energy (DOE) facility.

Principal decommissioning activities will be delayed until completion of an approximate 49 year SAFSTOR dormancy period. This cost estimate scenario includes the decontamination and dismantlement of the facility, and termination of the existing operating license at the end of that period.

B. Potential for Known or Suspected Contamination

The potential for known or suspected contamination at the NMP1 site has been evaluated by reviewing records of relevant information that have been collected in accordance with 10 CFR 50.75(g). Minor soil contamination related to operation of emergency condensers has been identified as having potential impact on effective decommissioning and remediation costs have been incorporated in this preliminary decommissioning cost estimate.

C. LLW Disposition Plan

Low Level (Radioactive) Waste (LLW) disposal costs include processing, packaging, shipping, and burial/vendor costs. NMPNS has assumed for this preliminary decommissioning cost estimate that the vendors currently performing these LLW disposal activities, or potentially other vendors, will be available throughout the decommissioning periods. It is also assumed that burial facilities, such as Barnwell facility in South Carolina and the Envirocare facility in Utah, will be available to support the decommissioning of NMP1. As such, rate schedules for both facilities have been used to generate disposal costs. NMP1 has applied reasonable escalation factors for these costs which are used in the preliminary decommissioning cost estimate.

D. Preliminary Schedule of Decommissioning Activities

A timeline of the decommissioning scenario is illustrated on Figure 1. For each of the four (4) decommissioning time periods identified on Figure 1, the activity and period-dependent costs are estimated. These time periods are briefly described in Section IV, below.

E. Other Factors That Could Significantly Affect the Cost to Decommission

NMPNS is currently unaware of any major site-specific factors that could have a significant effect on the cost of decommissioning. Additional information concerning the disposition of spent nuclear fuel and Greater Than Class C (GTCC) waste is provided below.

The preliminary decommissioning cost estimate assumes that the high-level waste repository, or some interim storage facility, will be fully operational by 2025, and that transfer of NMP1 spent fuel to the DOE will commence at that time. Based on the expected DOE removal schedule, NMPNS currently anticipates that transfer of the spent fuel to the DOE will be completed in 2045. Costs are included within the estimate for the long-term management of the spent fuel in the NMP1 spent fuel pool until 2045.

NMPNS also notes that the preliminary decommissioning cost estimate assumes that the disposal of GTCC waste will be at Yucca Mountain and at approximately the same rates as the disposal of the spent nuclear fuel.

IV. Preliminary Cost Estimate Considerations

The preliminary decommissioning cost estimate for NMP1 is provided in Tables 1 and 2. The estimate is based on reasonable decommissioning assumptions, assuming a permanent shutdown in August 2009. The preliminary decommissioning cost estimate is based on costs associated with the entire decommissioning work scope, including those activities related to the following periods of the decommissioning project: (1) planning and preparation, (2) plant deactivation, (3) safe storage operation, and (4) dismantlement. The scope of each of those activities is described below. Disposition of LLW is also accounted for in the preliminary decommissioning cost estimate, as described in Section III.C, above.

The preliminary decommissioning cost estimate also includes contingencies and escalation factors, as appropriate for the respective decommissioning activities. The contingencies were applied to decommissioning costs to account for uncertainties. The average weighted contingency applied is approximately 20.4%. In addition, escalation factors appropriate for the individual components of the decommissioning activities have been applied. NMPNS has also applied reasonable earnings rates to the decommissioning funds throughout the decommissioning periods.

The following discussion is provided as descriptive information regarding each of the principal decommissioning periods.

A. Planning and Preparation

In anticipation of the cessation of plant operations, preparations will be undertaken for the transition from plant operation to long-term storage. Preparation activities include the planning for permanent defueling of the reactor, revisions to technical specifications, characterization of the facility and major components, and development of the Post-Shutdown Decommissioning Activities Report (PSDAR). Activity specifications, cost-benefit and safety analyses, work packages, and procedures would be assembled to support placing the plant in a SAFSTOR condition.

B. Plant Deactivation and SAFSTOR Preparations

The Reactor Building, containing the spent fuel pool and associated support systems, will be isolated until such time that all spent fuel has been transferred from the spent fuel pool to the DOE. Systems not required to support the spent fuel pool operation or site surveillance and security will be drained, de-energized, and secured. Minimal cleaning/removal of loose contamination and/or fixation and sealing of remaining contamination will be performed.

C. SAFSTOR Operations

The plant will remain intact, with structures maintained in a safe, stable condition. Activities during this period include maintenance, inspections, and routine services to maintain safe conditions, adequate lighting, and heating and ventilation. Security, emergency planning, radiation protection, environmental monitoring, and operations support services will be provided

by personnel from the adjacent Nine Mile Point Unit 2 (NMP2) until the expiration of the NMP2 operating license. The transfer of spent fuel from the spent fuel pool to a DOE facility occurs during this period; this transfer is assumed to commence in 2025 and conclude in 2045.

D. Decontamination and Dismantlement

Final engineering and planning for decommissioning activities will be completed. The physical decommissioning activities associated with the removal and disposal of contaminated and activated components and structures will be conducted. Decontamination and dismantlement of the spent fuel pool and associated support systems will be initiated once transfer of the spent fuel to the DOE is complete. The NMP1 10 CFR Part 50 operating license, as with other licenses and permits, will be terminated at the end of this period.

V. Plans for Adjusting Levels of Funding

Until the end of its current license term NMPNS will provide an annual funding status report in accordance with 10 CFR 50.75(f)(1). Upon the assumed permanent shutdown at the end of its current license, NMPNS will address the funding adjustment requirements of 10 CFR 50.75(f)(4) and 10 CFR 50.82(a)(8)(iv) to evaluate the status of decommissioning funding financial assurance for NMP1 during the period of decommissioning. NMPNS intends to perform that evaluation on a regular basis (not to exceed every two years). If necessary, NMPNS will adjust its decommissioning funding in accordance with NRC decommissioning funding requirements.

VI. Summary

The total estimated decommissioning costs by period and decommissioning activity are provided in Tables 1 and 2. The total preliminary decommissioning cost is estimated to be $719 million in 2004 dollars. The current balance in the NMP1 decommissioning fund is approximately $302 million. NMPNS has applied reasonable earnings rates to the decommissioning funds throughout the decommissioning periods described above. In addition, the preliminary decommissioning cost estimate includes reasonable escalation factors for the decommissioning activities. Based on a cash flow analysis for the decommissioning activities to be performed for the periods described above, NMPNS believes that there is reasonable assurance that adequate decommissioning funds will be available to decommission NMP1 as described herein (assuming a 2009 shutdown of NMP1). NMPNS plans to review the decommissioning fund status on a regular basis, as described above.

Table 1 - Summary of Estimated Decommissioning Costs (by Decommissioning Activity)

Decommissioning Activity	Estimated Decommissioning Costs (2004 $ Millions)				
	Period 1 (2 years)	Period 2 (2 years)	Period 3 (49 years)	Period 4 (6 years)	Total Duration (59 years)
	Engineering & Planning	SAFSTOR Preparations	Plant Dormancy (SAFSTOR)	Decommissioning & Dismantlement	Total Cost
Radioactive Component Removal	$0.65	$0.83	$13.02	$64.62	$79.11
Decontamination and Dismantlement	$0.00	$4.77	$2.90	$17.80	$25.47
Management, Engineering and Support	$9.52	$48.64	$175.79	$61.26	$295.21
Low Level Waste Disposal Costs (1)	$0.00	$2.74	$0.39	$159.50	$162.63
Administrative Costs (2)	$0.00	$30.56	$104.17	$22.18	$156.91
Total Cost	**$10.17**	**$87.53**	**$296.26**	**$325.37**	**$719.33**

(1) Packaging, shipping, hazardous waste and burial/vendor/processing costs

(2) Taxes, insurance, NRC fees, energy, corporate, emergency planning, separation, severance, retention and security

Table 2 - SUMMARY OF DECOMMISSIONING COST DISTRIBUTION BY TIME PERIOD

	Estimated Decommissioning Costs (2004 $ Millions)				
Period	Period 1 (2 years)	Period 2 (2 years)	Period 3 (49 years)	Period 4 (6 years)	Total Duration (59 years)
	Engineering & Planning	SAFSTOR Preparations	Plant Dormancy (SAFSTOR)	Decommissioning & Dismantlement	Total Cost
Total Cost	$10.17	$87.53	$296.26	$325.37	$719.33

FIGURE 1

Decommissioning Timeline
Nine Mile Point 1 Preliminary Cost Estimate Study