

## Constellation Nuclear

Nine Mile Point  
Nuclear Station

*A Member of the  
Constellation Energy Group*

January 4, 2002  
NMP2L 2042

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

RE: Nine Mile Point Unit 2  
Docket No. 50-410  
NPF-69

**Subject:** *Request for Exemption from the Requirements of 10 CFR §54.17(c),  
TAC No. MB3532*

In a letter dated September 6, 2001 (Reference 1), Nine Mile Point Nuclear Station, LLC (NMPNS) notified the NRC of its plans relating to the renewal of Operating Licenses DPR-63 and NPF-69 for Nine Mile Point (NMP) Units 1 and 2, respectively. As noted in this letter, "In the event we decide to proceed with license renewal, an application for renewal of the NMP operating licenses is anticipated to be filed by the end of 2003. Since the NMP2 application could be submitted on a date which is prior to 20 years before the expiration of the operating license (i.e., October 31, 2026), a request for exemption from the schedular requirements of 10 CFR §54.17(c) would be submitted."

Accordingly, pursuant to the requirements of 10 CFR §54.15 and §50.12, NMPNS hereby requests an exemption from the conditions of 10 CFR §54.17(c) requiring that an application for a renewed operating license be submitted for approval to the NRC not "earlier than 20 years before the expiration of the operating license currently in effect."

The NMPNS detailed exemption request and accompanying justification is attached. This submission is similar in nature to the exemption requests previously submitted by the Duke Energy Corporation and Florida Power and Light Company (References 2 and 3), which were approved by the NRC in 1999 and 2001, respectively (References 4 and 5). Consistent with those requests and subsequent NRC approvals, this exemption seeks schedular, rather than substantive, relief.

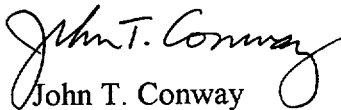
Approval of this exemption request is required by NMPNS to complete feasibility determinations of filing concurrent applications with the NRC in 2003 for the renewal of the operating licenses for NMP1 and NMP2. By the end of 2003, NMPNS will have collective nuclear operating experience of approximately 49 years. This experience base

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demonstrates compliance with regulatory intent in achieving the underlying purpose of the rule. However, with existing operating licenses for NMP1 and NMP2 scheduled to expire in 2009 and 2026, respectively, satisfaction of the 20-year requirement for NMP2 cannot be attained prior to 2006. Thus, absent an exemption, 10 CFR §54.17(c) would preclude NMPNS from filing a joint license renewal application for NMP1 and NMP2 before 2006.

The background and supporting bases for the requested regulatory relief are addressed in greater detail in the attached request for exemption. NMPNS would appreciate NRC's approval of this exemption request by March 31, 2002. If the NRC Staff has any questions, please do not hesitate to contact the Project Manager for the Nine Mile Point License Renewal Project, Mr. Steven Pope, at 410-793-3425.

Sincerely,

  
John T. Conway  
Site Vice President

JTC/MSL/cld

Attachment: Nine Mile Point Unit 2 Request for Exemption from the Requirements of 10 CFR §54.17(c)

- References:
1. Letter from NMPNS to NRC, Robert E. Denton to Document Control Desk, dated September 6, 2001, "Advance Notice of Intent to Apply for Renewal of Operating Licenses."
  2. Letter from Duke Energy Corporation to NRC, M.S. Tuckman to Document Control Desk, dated June 22, 1999, "Request for Exemption Pursuant to 10 CFR §54.15 and §50.12 - Exemption to the Scheduling Requirements of CFR §54.17(c)."
  3. Letter from Florida Power and Light Company to NRC, Rajiv S. Kundalkar to Document Control Desk, dated October 30, 2000, "St. Lucie Unit 2, Docket No. 50-389, Request for Exemption from the Scheduling Requirements of 10 CFR §54.17(c)."
  4. NRC letter dated October 1, 1999, F. Rinaldi to H.B. Barron, "McGuire Nuclear Station, Unit 2 - Issuance of Exemption to 10 CFR 54.17(c) Regarding Schedule for License Renewal Application (TAC MA5914)."
  5. NRC Letter dated February 27, 2001, "K.N. Jabbour to T.F. Plunket, "St. Lucie Plant, Unit 2, Exemption from the Requirements of 10 CFR Par 54, Section 54.17(c) Regarding Schedule for License Renewal Application (TAC No. MB0418)."

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cc: Mr. H. J. Miller, NRC Regional Administrator, Region I  
Mr. C. I. Grimes, Chief, NRC License Renewal and Standardization Branch  
Mr. G. K. Hunegs, NRC Senior Resident Inspector  
Mr. P. S. Tam, Senior Project Manager, NRR (2 copies)  
Records Management

**NINE MILE POINT UNIT 2  
REQUEST FOR EXEMPTION FROM THE REQUIREMENTS OF  
10 CFR § 54.17(c)**

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**I. Executive Summary**

10 CFR Part 54 sets forth the requirements for the renewal of operating licenses for nuclear power plants. 10 CFR §54.17(c) states that “An application for a renewed license may not be submitted to the Commission earlier than 20 years before the expiration of the operating license currently in effect.” Based on this limitation, Nine Mile Point Unit 2 (NMP2) would not be able to submit an application for license renewal prior to October 31, 2006. The underlying purpose of this regulation is to ensure that an applicant for license renewal has accumulated sufficient operating experience such that an adequate assessment of age-related degradation of plant structures, systems, and components may be made. 10 CFR §54.15 authorizes exemptions to 10 CFR Part 54 in accordance with 10 CFR §50.12.

Nine Mile Point Nuclear Station, LLC (NMPNS) hereby requests an exemption from the requirement of 10 CFR §54.17(c) pursuant to 10 CFR §54.15 and 10 CFR §50.12. NMPNS requires this exemption in order to process and submit the NMP2 license renewal application concurrently with the Nine Mile Point Unit 1 (NMP1) license renewal application. Currently, NMP1 has over 31 years and NMP2 has over 13 years of operating experience. The following sections of this request demonstrate, pursuant to 10 CFR §50.12, that special circumstances exist to warrant the approval of this request; namely, that the application of 10 CFR §54.17(c) to NMP2 is not necessary to achieve the underlying purpose of the rule. Additionally, both NMPNS and the NRC will benefit from the efficiencies gained with the preparation and review of a single dual-unit application as opposed to preparation and review of separate NMP1 and NMP2 applications submitted at different times.

This exemption request seeks schedular relief only. NMPNS does not seek an exemption from any of the substantive requirements of 10 CFR Part 54 in connection with the preparation of the NMP1 and NMP2 license renewal application. NMPNS will satisfy the pertinent requirements of 10 CFR Part 54 when preparing and submitting the NMP1 and NMP2 license renewal application. Public health and safety will not be adversely affected by the granting of this exemption.

## **II. Background**

NMPNS is the exclusive owner and operator and the holder of record for the operating license for NMP1. Additionally, NMPNS is part-owner, exclusive operator, and a holder of the operating license for NMP2.<sup>1</sup> NMP1 is classified as a BWR/2 reactor with the nuclear steam supply system supplied by the General Electric Company. The original plant owner, Niagara Mohawk Power Corporation, served as the site Architect Engineer; while the plant constructor was the Stone & Webster Engineering Corporation. The licensed thermal capacity of NMP1 is 1850 MW. The initial operating license for NMP1 was issued in August 1969, with a final operating license (DPR-63) issued in December 1974. Commercial operation of NMP1 was initiated in December 1969.

NMP2 is classified as a BWR/5 reactor with the nuclear steam supply system (NSSS) also supplied by the General Electric Company. The Stone & Webster Engineering Corporation served as both Architect Engineer and constructor for the plant. The licensed thermal capacity of NMP2 is 3467 MW. The initial operating license for NMP2 was issued in October 1986, with a final operating license (NPF-69) issued in July 1987. Commercial operation of NMP2 was initiated in March 1988.

The NMP1 operating license expiration date is August 22, 2009. The NMP2 operating license expiration date is October 31, 2026. Both the NMP1 and NMP2 operating licenses represent a licensed operating term of 40 years for their respective units.

## **III. Basis for Exemption Request Pursuant to 10 CFR §50.12**

10 CFR Part 54 governs the issuance of renewed operating licenses for nuclear power plants. The filing of license renewal applications is addressed in 10 CFR §54.17, which states: "An application for a renewed license may not be submitted to the Commission earlier than 20 years before the expiration of the operating license currently in effect." Since NMPNS desires to file a license renewal application for NMP2 prior to October 31, 2006 (the date on which the 20-year requirement would be satisfied), an exemption from the requirements of 10 CFR §54.17(c) is necessary. 10 CFR §54.15 of the license renewal regulations states: "Exemptions from the requirements of this part may be granted by the Commission in accordance with 10 CFR 50.12."

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<sup>1</sup> In its Order dated June 22, 2001 and a Supplemental Order dated October 30, 2001, NRC approved the direct transfer of the NMP1 and NMP2 Operating Licenses to Nine Mile Point Nuclear Station, LLC, which is an indirect subsidiary of Constellation Nuclear, LLC. Constellation Nuclear completed purchase of NMP1 and NMP2 on November 7, 2001.

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10 CFR §50.12(a) states, in pertinent part:

The Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of the regulations of this part, which are-

- (1) Authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security.
- (2) The Commission will not consider granting an exemption unless special circumstances are present. Special circumstances are present whenever...
  - (ii) Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule...

The following analysis demonstrates that the requirements of 10 CFR §50.12(a)(1) are satisfied and that the special circumstances of 10 CFR §50.12(a)(2)(ii) are applicable.

### A. 10 CFR § 50.12(a)(1)

This paragraph of the regulation requires an exemption request to satisfy three requirements: (1) the request must be authorized by law, (2) the request must not present an undue risk to public health and safety, and (3) the request must be consistent with the common defense and security. These three requirements are discussed below.

#### 1. Authorized By Law

The schedular requirement of 10 CFR §54.17(c) was adopted solely at the discretion of the NRC in the exercise of its rulemaking authority under Section 161 of the Atomic Energy Act, 42 U.S.C., paragraph 2201. No statute required the NRC to adopt this provision. No other regulation of either the NRC or another agency required the NRC to adopt this provision. The NRC has authority under 10 CFR §50.12 to grant exemptions from the requirements of NRC regulations. Therefore, no statutory or regulatory provision precludes the Commission from granting the requested exemption upon a proper showing. Specifically, 10 CFR Part 54 states that the NRC may grant exemptions from the requirements of 10 CFR Part 54 in accordance with 10 CFR §50.12. Accordingly, this requested exemption is "authorized by law," as required by 10 CFR §50.12(a)(1).

Further, when the current license renewal rule was promulgated in 10 CFR Part 54, the NRC indicated that it would consider an exemption from 10 CFR §54.17(c) if sufficient information is

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available on a plant specific basis to justify submission of an application to renew a license before completion of 20 years of operation.<sup>2</sup> The NRC has granted similar exemptions to Duke Energy Corporation<sup>3</sup> and Florida Power and Light.<sup>4</sup>

### 2. No Undue Risk to Public Health and Safety

The granting of this exemption poses no risk to public health and safety. This exemption is for schedular relief only. Granting an exemption from the requirements of 10 CFR §54.17(c) only relieves NMPNS of the requirement to wait until at least October 31, 2006, before submitting an application for renewal of the NMP2 operating license. The substantive requirements of the license renewal process as provided for in 10 CFR Part 54 still apply to any license renewal application to be submitted for NMP2. The intent of 10 CFR §54.17(c) is to ensure that sufficient plant operating experience is accrued prior to any application for license renewal. The 10 CFR §50.12(a)(2)(ii) discussion below provides the details and basis for why sufficient operating experience is available to support a license renewal application for NMP2.

### 3. Common Defense and Security

The granting of this exemption request is consistent with the common defense and security. As noted above, this exemption request is for schedular relief only; all other NRC requirements pertaining to the renewal of the NMP2 operating license will be fully satisfied in the license renewal application. Further, there are no security or safeguards issues raised by the proposed exemption.

#### B. 10 CFR §50.12(a)(2)(ii)

10 CFR §50.12(a)(2) lists six "special circumstances" for which an exemption may be granted. Pursuant to the regulation, it is necessary for one of these special circumstances to be present in order for the NRC to consider granting an exemption request. One special circumstance that is applicable to this exemption request is found in 10 CFR §50.12(a)(2)(ii), which states:

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<sup>2</sup> 60 Federal Register at 22488, May 8, 1995.

<sup>3</sup> Letter, NRC (Frank Rinaldi) to Duke Energy Corporation (H. B. Barron), "McGuire Nuclear Station, Unit 2 - Issuance of Exemption to 10 CFR 54.17(c) Regarding Schedule for License Renewal Application", October 1, 1999.

<sup>4</sup> Letter, NRC (Kahtan N. Jabbour) to Florida Power & Light Company (T. F. Plunkett), "St. Lucie Plant, Unit No. 2, Exemption from the Requirements of 10 CFR Part 50, Section 54.17(c) Regarding Schedule for License Renewal Application", February 27, 2001.

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“Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule.”

The 20-year requirement of 10 CFR §54.17(c) was a part of the original Part 54 rule as published in 1991. When this rule was first issued, the NRC stated that the purpose of the requirement was “to ensure that substantial operating experience is accumulated by a licensee before it submits a renewal application.”<sup>5</sup> This purpose was reiterated in the Safety Evaluation accompanying the 10 CFR §54.17(c) exemption granted to Duke Energy Corporation, wherein the NRC stated:

“The Commission’s basis for establishing the 20-year limit contained in Section 54.17(c) is discussed in the 1991 Statements of Consideration for Part 54 (56 FR 64963). The limit was established to ensure that substantial operating experience was accumulated by a licensee before a renewal application is submitted such that any plant-specific concerns regarding aging would be disclosed.”<sup>6</sup>

When developing the Part 54 rule change issued in 1995, the NRC considered revising the 20-year requirement and solicited public comments on the subject. Two commenters, the Nuclear Energy Institute and the U.S. Department of Energy, concluded that some plants might have sufficient operating history and plant experience to provide reasonable assurance that aging concerns can be identified with less than 20 years of operation.<sup>7</sup> In response to the public comments, the NRC noted that it would not revise the 20-year requirement, but the Commission recognized that some license renewal applicants might have sufficient basis for an exemption:

“The Commission is willing to consider, however, plant-specific exemption requests by those applicants who believe that they may have sufficient information available to justify

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<sup>5</sup> 56 Federal Register at 64963, December 13, 1991.

<sup>6</sup> Safety Evaluation by the Office of Nuclear Reactor Regulation Exemption from 10 CFR 4.17(c) Regarding Schedule to Apply for a Renewed Operating License - Catawba Nuclear Station, Units 1 and 2 Docket Nos. 50-413 and 50-414 and McGuire Nuclear Station, Unit 2 Docket No. 50-370, October 1, 1999.

<sup>7</sup> Although the 20-year requirement of 10 CFR §54.17(c) is written with respect to years remaining until expiration of a plant’s operating license, the focus of this provision is on actual years of operation under the current operating license. Since an operating license is typically issued for a 40-year period (the maximum period allowed by 10 CFR §50.51), the rule effectively requires applicants to have accumulated at least 20 years of operating experience prior to the submittal of a license renewal application.



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applying for a renewal license prior to 20 years from the expiration date of the current license.”<sup>8</sup>

Although the 20-year requirement of 10 CFR §54.17(c) is specifically applicable to the plant applying for a renewed operating license, the operating experience available to a license renewal applicant is not limited solely to the operating experience accumulated by that plant. In the Supplementary Information accompanying the 1991 publication of the rule, the NRC clearly endorsed the use of operating experience available from industry sources when it made the following comment with respect to the 20-year rule:

“...both renewal applicants and the NRC will have the benefit of the operational experience from the nuclear industry and are not limited to information developed solely by the utility seeking a renewed license.”<sup>9</sup>

Based on this background, an exemption is appropriate for NMP2 if sufficient operational experience is available for use in the license renewal process. As indicated above, this operational experience is not limited to that accumulated by NMP2; it may also include operational experience gained from NMP1 and from the nuclear industry as well. The discussion that follows outlines how sufficient operating experience and history is available to support a 10 CFR §54.17(c) exemption for NMP2.

### 1. Plant Design and Maintenance

In considering the technical development of a concurrent license renewal application for both NMPNS units, common attributes between the two units contribute to determining suitable license renewal analyses and assessments. Use of these NMPNS common attributes in the license renewal process allows crediting the total site operational experience base in satisfaction of the underlying purpose of 10 CFR §54.17(c).

Both units are boiling water reactors (BWRs) with nuclear steam supply systems provided by General Electric Company, and Stone & Webster Engineering Corporation the constructor for both units. This similarity makes much of the experience with plant aging at NMP1 applicable to NMP2, and vice versa. Moreover, many of the maintenance activities and other existing aging management programs are common to both units, so that the effectiveness of aging management programs is demonstrated by the experience at both units. In addition, the NMPNS site organization shares a

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<sup>8</sup> 60 Federal Register at 22488, May 8, 1995.

<sup>9</sup> 56 Federal Register at 64963, December 13, 1991.

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common operating experience review department such that operating experience and corrective actions are continually shared between the units.

Further, the existence of aging effects is primarily a function of the materials used and the environment to which those materials are subjected. NMP1 and NMP2 not only share some common facilities that are within the scope of the license renewal review, but also have many similar components and materials. There is also considerable similarity in environment. For example, the civil structures are subject to the same soil chemistry, atmospheric and meteorological conditions, and climate.

Due to the differences between the units (NMP1 is a BWR/2 and NMP2 is a BWR/5), it is readily expected that the Integrated Plant Assessment (IPA) screening process will identify some degree of differing plant components and structures. However, once this aspect of the initial license renewal process is complete, implementation of the detailed license renewal evaluation process is independent of the overall reactor system design concept. Thus, differing overall plant system designs between NMP1 and NMP2 are of lower significance in development of the IPA and, consequently, the NRC safety reviews associated with license renewal.

### 2. Integrated Plant Assessment

Regardless of the NMP unit, development of the IPA requires inclusion of all passive, long-lived structures and components, and the demonstration that the effects of aging on these structures and components will be adequately managed so that the intended design function will be maintained. 10 CFR §54.21(a)(1) is used to define the regulatory criteria for structures and components subject to an aging management review as part of a license renewal application. In the case of NMP1 and NMP2, development of the IPA will occur through evaluation of those structures and components screened within the license renewal assessment scope, and ultimately depends upon basic design characteristics and operating environments. This approach is possible since Aging Management Reviews (AMRs) and Time-Limited Aging Analyses (TLAAs)<sup>10</sup> are used to evaluate the adequacy of critical design characteristics of components and structures in regard to their long-term operational environments (e.g., pressure, temperature, chemistry, flow, etc.). Since the operating environmental conditions between the two units are generally the same for the vast majority of the components and structures expected

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<sup>10</sup> NEI 95-10, Revision 3; "Industry Guidelines for Implementing the Requirements of 10 CFR Part 54 – The License Renewal Rule," March 2001.

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to be initially identified for inclusion within the IPA, it is possible for NMPNS to perform a series of common assessments. The IPA technical review process in this instance, therefore, may be considered as developed to credit sharing of the long term operational experiences between the units in identifying and assessing the critical characteristics of such components and structures. Thus, the commonalities related to design characteristics and operating environments between the two NMP units may be used as a foundation in satisfying the intent of the twenty-year requirement of 10 CFR §54.17(c).

With respect to the commonality of each plant's detailed structure and component design, developmental considerations of the IPA and performance of AMRs and TLAs center around those parameters influencing the aging effects of screened systems, structures, and components. According to industry accepted IPA methodology<sup>11</sup>, to be applied at both units, these evaluations are based on assessment of detailed design characteristics such as the component or structure material of construction, degree of passive functionality, and operating and accident environmental limits (e.g., pressure, temperature, flow, chemistry, etc.). Thus, with the same site-wide operational experience database, it is programmatically effective to consider both NMP units simultaneously.

In addition to IPA development and the detailed assessments of AMRs and TLAs, NRC regulations in 10 CFR §54.21(a)(3) address the conduct and control (e.g., a subset of the plant maintenance and engineering functions) of those structures and components screened into the IPA assessments:

“For each structure and component identified in paragraph (a)(1) of this section, demonstrate that the effects of aging will be adequately managed so that the intended function(s) will be maintained consistent with the CLB [Current Licensing Basis] for the period of extended operation.”

Satisfaction of this requirement, in part, deals with identification and assessment of plant programs and their ability to mitigate the aging effects. Such programs are generally of four types: prevention, mitigation, condition monitoring, and performance monitoring. Some of the Aging Management Programs from NUREG-1801<sup>12</sup> that are applicable to both units include, but are not limited to:

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<sup>11</sup> Id

<sup>12</sup> NUREG-1801; “Generic Aging Lessons Learned”; July 2001. Note: The listing of programs has been modified by removal of PWR specific and NMP non-applicable programs.

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- ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD
- Station Water Chemistry
- Spent Fuel Rack Boraflex Monitoring
- Fire Protection
- ASME Section XI, Subsection IWE
- ASME Section XI, Subsection IWF
- 10 CFR Part 50, Appendix J
- Structures Monitoring Program

Development and use of the programs listed above represents a common, site-wide, approach to management of the aging effects under consideration by 10 CFR §54.21(a)(1). Thus, with the same site-wide operational experience database, it is programmatically effective to consider both NMP units simultaneously.

### 3. Plant Procedures and Use of Operating Experience

The NMPNS Deviation/Event Report (DER) procedure governs the documentation, analysis, and corrective actions associated with plant nonconformances and other conditions of concern. This procedure is not unit specific and, as applicable, the subject condition of one unit is reviewed for generic implications potentially applicable to the other unit at NMPNS.

NMPNS also has an administrative procedure for the review and dissemination of operating experience obtained from both external and internal sources. This procedure requires screening of information for potential NMPNS applicability. This information is received from such sources as the NRC (e.g., NRC Information Notices), Institute of Nuclear Power Operations (INPO), NSSS vendor reports/notices, other vendor reports/notices, and in-house operating experience. If an item is determined to be applicable to NMPNS, then the information item is addressed in the DER Process.

The 10 CFR §50.65 maintenance rule implementing procedure requires the consideration of operating experience from industry sources such as the NRC, nuclear vendors, and INPO. This operating experience is factored into condition monitoring programs, root cause evaluations, and the establishment of system/component goals.

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Thus, NMP2 incorporates operational experience gained from NMP1, as well as that gained from industry sources. This accumulated operating experience is sufficient to satisfy the underlying purpose of 10 CFR §54.17(c).

### **IV. Conclusion**

This exemption request provides sufficient basis to support the issuance of an exemption from the schedular requirement of 10 CFR §54.17(c). As required by 10 CFR §50.12, the requested exemption is authorized by law, presents no undue risk to public health and safety, is consistent with the common defense and security, and is supported by "special circumstances." Between the two NMP units, over 40 reactor-years of experience are currently available to support the preparation and review of an application for license renewal. This accumulated operating experience is more than enough to satisfy the underlying purpose of the license renewal schedular requirement. In addition, operating experience gained from industry sources is used to the extent it is available and applicable.

NMPNS hereby requests NRC authorization to permit the submittal of a license renewal application for NMP2, concurrently with that for NMP1, prior to meeting the 10 CFR §54.17(c) schedular requirement. It is expected that any operational experience that might otherwise be gained by waiting until October 31, 2006 to submit the NMP2 application would be minimal and would not significantly impact the outcome of the license renewal process.

This request is similar to, and consistent with, the exemption requests made by Duke Energy Corporation and Florida Power and Light, which were granted by the NRC.