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Washington, DC 20555

Comments on the Preliminary Regulatory Philosophy and Approach for License Renewal Regulation

The Federal Register, Vol. 54, No. 197, dated October 13, 1989 contained a notice of a public workshop on technical and policy considerations related to nuclear plant license renewal. The notice also contained a statement of the Preliminary Regulatory Philosophy and Approach for License Renewal Regulation. Written comments were invited to be submitted by December 1, 1989. This letter forwards those comments.

Northern States Power's Monticello Nuclear Generating Plant is serving as the lead Boiling Water Reactor plant in the industry Lead Plant License Renewal Program. As such we have participated extensively in the development of the comments on the philosophy, conceptual outline and the responses to the questions on the workshop technical sessions being provided by the Nuclear Management and Resources Council (NUMARC) on this subject and fully endorse them as expanded by our comments contained in Attachment 1. Due to time constraints, individual responses to the questions issued in conjunction with the workshop have not been provided, at this time. As NUMARC responses to the workshop sessions on Overview and Screening Systems are finalized, should we feel the need to provide separate responses, we will prepare and forward them to you accordingly.

Please contact us if you have any questions or further information is required on this issue.

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Attachment 1 - Comments on the Preliminary Regulatory Philosophy and Approach for License Renewal Regulation

COMMENTS ON THE PRELIMINARY REGULATORY PHILOSOPHY AND APPROACH FOR LICENSE RENEWAL REGULATION

CURRENT LICENSING BASIS

The NRC has developed a preliminary regulatory philosophy which is based on the current licensing basis. Northern States Power agrees with the two basic principles that the NRC proposes to use as the basis for the License Renewal Regulation. These are:

1) The "current licensing basis" at a specific reactor provides and maintains a level of safety for operation during the initial term that is sufficient to provide adequate assurance of the public health and safety, and common defense and security, and that the same level of safety is also adequate for continued operation during any renewal period.

2) Any license renewal policy must provide assurance that the level of safety provided by a nuclear power plant's current licensing basis will not degrade during the renewal period.

Northern States Power also agrees with the NRC that the licensee must continue to comply with the current licensing basis as it evolves to assure that adequate protection of the public is continued. This can be done by the continuation of the licensee programs for ensuring continued safe operation of the plant, and the Commission's regulatory oversight programs as is the current practice.

The conceptual outline of the proposed rule states that the license renewal rule will require the application to contain a summary of all regulatory requirements and commitments so that the current licensing basis will be clearly understood and located in one document. Northern States Power believes that this summary of the entire current licensing basis need not be submitted as part of the application for renewal of a license as it is inconsistent with the NRC philosophy. In item 1 of the NRC philosophy listed above, it is established that the current licensing basis is a continuing entity from the initial license term. The levels of safety which are adequate to protect the health and safety of the public have been established and the ability to maintain these levels has been demonstrated successfully during the initial license period. An alternative to the conceptual outline would be to provide a listing of the documents which contain the current licensing basis relied upon in the evaluation of systems, structures and components important to safety.

The second item of the NRC philosophy requires that the level of safety in the license renewal term will not decrease below the level of adequate safety which has been established in the current licensing basis. The focus of Northern States Power's license renewal program is the evaluation and management of significant age- related degradation of systems, structures and components. The license application will address this consideration by

including those portions of the current licensing basis which are pertinent to the evaluation of the management of age-related degradation.

Paragraph XX.9(b) of the conceptual outline states that the application shall include certification of compliance with the current licensing basis. As stated in the NRC philosophy, compliance can be assured for the renewal term by the licensee's programs for ensuring continued safe operation of the plant and the Commission's regulatory oversight programs. For those portions of the current licensing basis which will be submitted because they are pertinent to the evaluation of the management of age-related degradation, an oath or affirmation would be sufficient.

SYSTEMS, STRUCTURES AND COMPONENT EVALUATION

In the conceptual outline, the NRC staff gave its position on the licensee's actions required to provide assurance that systems, structures and components important to continued safe plant operation will not be degraded by aging mechanisms. The three main premises which outline the NRC's philosophical position are:

1. Those systems, structures, and components that are effectively covered by existing ongoing NRC requirements and/or licensee programs, or are not subject to aging mechanisms need not be addressed in the application.

2. The scope of systems, structures and components to be addressed will probably be similar to that identified in the rulemaking for environment qualification of safety related electrical equipment.

3. Licensees would be required to identify where existing programs are utilized to monitor degradation mechanisms to provide reasonable assurance that replacement or refurbishment schedules for degrading equipment are being developed or service lifetime for equipment established.

In paragraph XX.9 of the conceptual outline, the NRC's approach to facilitate the above policy is given. This approach includes identification of systems and structures important to safety. This approach further requires identification of the following for all components which make up these systems and structures important to safety: the design requirements; functions and environmental conditions under which the equipment must operate; determination of all the applicable degradation mechanisms; description of measures taken to manage these degradation mechanisms; and finally a description and technical basis for monitoring effects of all relevant age-related degradation mechanisms. The level of detail and type of technical data requested by the conceptual outline is inconsistent with the philosophy which is intended to focus reviews on systems, structures and components which are important to safety and are subject to significant age related degradation mechanisms during the renewal period.

While the information requested under XX.9 would certainly provide an adequate basis for review of aging for these systems, structures, and components, it goes well beyond the information necessary. The information requested should be focused to provide only that necessary to evaluate those systems, structures and components whose safety function can be affected by age-related degradation. The approach outlined by the industry in its report "Methodology to Evaluate Plant Equipment for License Renewal" which was forwarded to the NRC staff on October 6, 1989, provides the criteria to determine the appropriate level of evaluation and resulting documentation and is consistent with the NRC philosophy. The following is a synopsis of this methodology.

The initial step of the industry methodology identifies the systems and structures relied upon to operate the plant safely which basically corresponds to the NRC staff approach to the initial step of identifying systems, structures, and components that are important to safety. Under the NRC staff approach, a listing of all components which make up those systems and structures important to safety would be necessary as well as providing all of the information requested in XX.9(c). The industry methodology does not require all of the information requested in XX.9(c) at this level.

The next set of steps in the industry approach evaluate the important to safety systems and structures at the component level. The first component step determines which components do not contribute to the safety function of the system or structure and whose failure would not preclude performance of the safety function. For components which are dispositioned at this step, the documentation which needs to be provided is that necessary to support a determination that the component does not contribute to the system's safety function, and the determination that if the component failed it would not preclude the system from performing its safety function.

The second step identifies those components which are subject to established, effective replacement, refurbishment or inspection programs. For components to be dispositioned at this step, the documentation which needs to be provided is that necessary to support determination of the component's safety function(s), the degradation mechanisms which could preclude that component from performing that safety function(s), and the program(s) which ensure that function is being maintained.

The third step identifies those components which are not subject to significant age-related degradation (deterministically) or if aging resulted in component failure would not have a significant impact on risk (probabilistically). For components to be dispositioned at this step would require documentation which references documents that provide the basis for the conclusion that the component is not subject to significant age-related degradation or provides the risk assessment results.

The final step of the industry approach identifies the options for dispositioning the components which remain after the previous steps of the methodology. The components which remain at this point in the evaluation process are those which contribute to the ability of a system to perform its

safety function or can preclude a system from performing that safety function and for which it has not been demonstrated that degradation mechanism is being managed effectively or that the component is not subject to significant age related degradation. Various options to disposition the remaining components from the evaluation are available. These include, among other options, enhancement of existing programs, detailed aging evaluations, periodic replacement of the component or trending of critical parameters. Depending on the option chosen, various levels of the documentation required by XX.9(c) would be provided.

We believe that the industry methodology provides a systematic method for determining the amount of evaluation and documentation necessary to ensure that aging during the renewal period will not diminish plant safety below the acceptable level provided by the current licensing basis. The detailed documentation for all the steps in this process would be available for review and audit by the NRC staff. The industry methodology is currently being demonstrated by Monticello Nuclear Generating Plant, the lead boiling water reactor plant. The pilot system report when complete will be submitted to the NRC staff for review. We request that following NRC staff review of the report that the industry methodology be incorporated into the proposed license renewal regulation.

We do not believe that it is necessary to list the degradation mechanisms in the license renewal rule. The industry evaluation methodology and the industry reports both require identification of the significant degradation mechanisms for those components determined to be important to safety. These industry methods and reports are sufficient to assure all important degradation mechanisms are considered. If inclusion of these mechanisms in the rule is necessary, they should be more clearly defined and categorized by component type (i.e. electrical, fluid, ...).

We also do not think that there is a need to address those systems, structures, and components which would be included on the basis of their solely being a trip initiator. The loss of availability from these systems, structures, and components will adversely affect plant economics. Attention to degradation of these structures, systems, and components, will be an important part of the overall plant life extension program.

ENVIRONMENTAL ISSUES

Northern States Power agrees with the NRC staff position on environmental issues, that in order to comply with the National Environmental Policy Act (NEPA), an environmental assessment is required at a minimum to support license renewal rulemaking. We believe the scope of this environmental assessment should be limited to the rule itself. In that way its completion could coincide with the completion of the rulemaking in May, 1991 to meet the schedule of the lead plants license renewal submittal.

In parallel with the preparation of the environmental assessment to support license renewal rulemaking, the NRC should pursue the development of a generic

environmental assessment or environmental survey to bound the environmental impacts of license renewal. The use of parallel paths for the renewal rule and this generic environmental assessment will reduce the risk that this generic environmental assessment will delay the issuance of the renewal rule. The staff's intention to adopt the findings from this generic environmental assessment as a rule is supported. Items such as severe accidents could be handled generically and the results placed in a table in 10 CFR 51. The findings could then be utilized in individual license renewal proceedings. It is requested that this generic environmental assessment be completed in parallel with the rulemaking so that the lead plants may take advantage of this generic resolution of as many environmental issues as possible.

Northern States Power also agrees with the NRC that an environmental assessment as opposed to an environmental impact statement should be prepared for submittal with individual license renewal applications. This would require the modification of 10 CFR 51.20.b.2 to allow the preparation of an environmental assessment which would assess the need for an environmental impact statement. Continued plant operation during the renewal period should not result in significant environmental impacts which would require an environmental impact statement.

SEVERE ACCIDENTS

The conceptual outline states that the staff is considering requirements related to severe accidents that must be satisfied before submission of a renewal application takes place. Northern States Power feels that severe accident closure should not be included as a precondition to license renewal. Northern States Power will be submitting a response to Generic Letter 88-20 "Individual Plant Examination for Severe Accident Vulnerabilities 10 CFR 50.54(f)" as a process of closing this issue. Severe accidents are also outside the scope of license renewal rulemaking because they are not connected to age-related degradation. In grouping severe accident issues with license renewal, the renewal process could be greatly delayed which could adversely effect the lead plants.

The accident management programs are currently being addressed by the NUMARC working group on severe accidents. As part of its function, the group is addressing the definition and enhancement of existing plant specific accident management capabilities. It has recently issued "Guidelines for Evaluating Accident Management Capabilities" in draft form as part of its work.

BACKFIT RULE

Northern States Power supports the NRC's intention to change the Backfit Rule, 10CFR 50.109 to remove the ambiguity pertaining to the applicability of the backfit rule during the license renewal term. It will then be clear that the rule will be in effect during the license renewal period.

However, the staff's position of removing the backfit rule during the evaluation of the application for license renewal is not acceptable. This

would leave the licensees open to requirements that are beyond the scope of license renewal. Our desire to have the backfit rule apply is not to prevent needed changes. Rather, it is because it provides a disciplined and structured process for the licensee and NRC staff alike to evaluate changes necessary to manage age related degradation during the renewal term.

PROBABILISTIC RISK ASSESSMENT

Northern States Power feels that Level I and II Probabilistic Risk Assessments are useful and may be beneficial but should not be required as a regulatory decision mechanism. We do not feel that a probabilistic approach to evaluate systems, structures and components should be required at this time as there are no established, recognized criteria for acceptance of probabilistic risk assessment results. Use of probabilistic risk assessments should be at the option of the license renewal applicants.

Northern States Power believes that a level III probabilistic risk assessment would not be of value to the license renewal program. A level III probabilistic risk assessment concerns off-site risks which are now covered by existing programs that are contained in the current licensing basis. These programs are updated as needed and will continue to be relevant into the renewal term.

STANDARDS FOR RENEWAL OF LICENSE

Northern States Power's position on license renewal is that it is not an issuance of a new license, but an extension of the existing license. The findings in 10 CFR 50.57(a) were made when the initial operating license was granted and served as the core of the current licensing basis. As stated in the NRC's philosophy, this licensing basis has evolved over time to provide ongoing assurance that the original conclusion of adequate protection of the health and safety and common defense and security continues to remain valid. This philosophy does not lead one to conclude that the current licensing basis requires a re-review to again demonstrate adequacy. We believe that the findings required under 10 CFR 50.57(a) can be continued through the renewal term. As such, the only findings which the NRC needs to make to support issuance of a renewed license is that age-related degradation is being managed and will not affect health and safety of the public during the renewed license term. Therefore, section XX.19(a) should be deleted from the license renewal rule as it is inconsistent with the NRC's renewal philosophy. Sections XX.19(b) and XX.19(c) should also be deleted as they are enveloped by section XX.19(d). Section XX.19(e) should be modified to include only those systems, structures, and components whose safety function can be affected by age-related degradation.

ISSUANCE OF RENEWED LICENSE

In Section XX.21 of the conceptual outline of the license renewal rule, it states that the renewal term should be limited to 20 years. There is no basis given for this 20 year limitation. Northern States Power supports the

position that the applicant may apply for a longer renewal term if it can demonstrate the technical basis justifying plant operation during that length of time. The NRC should include in this section a provision for additional renewal term(s) upon expiration of the existing license renewal term.

Also in Section XX.21(b), the statement "estimated useful life of the facility" should be deleted. Useful life is an economic determination which should be made by the holder of the license.