

November 25, 1992

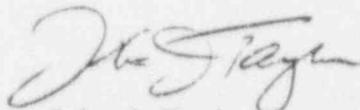
Mr. Ivan Selin
Chairman
US Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Selin:

The decision by Northern States Power to not submit the license renewal application for its Monticello Nuclear Generating Plant at this time represents a significant setback for all nuclear plant owners considering long term nuclear plant operation. As you are aware, this decision is based in large measure on regulatory uncertainty associated with the license renewal rule due to NRC staff interpretation of the requirements of 10CFR54 which appear to depart significantly from the principles established as its basis.

We fully concur with and share the concerns identified by Northern States Power in their report, "Perspectives on the License Renewal Process (10CRF54)." Furthermore we request that the Commission undertake the specific actions identified by NSP in their report.

Sincerely,



John J. Taylor
Vice President
Nuclear Power Division

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PDR COMMS NRCC
CORRESPONDENCE PDR

DEC. 11/24/92

Perspectives on the License Renewal Process
(10 CFR Part 54)

Lead Plant License Renewal Project

Monticello Nuclear Generating Plant

Northern States Power Company

November 20, 1992

Executive Summary

Northern States Power serves as the Lead Boiling Water Reactor in the industry's Lead Plant License Renewal Program. The final license renewal rule (10 CFR Part 54) was issued in December, 1991. Over the course of the last year NSP has actively been applying the final rule by preparing a license renewal application. That application has been placed on hold. Four reasons for this hold have been cited. They are: 1) The uncertain resolution of the high level waste issue; 2) The uncertain resolution of the low level waste issue and rising costs resulting from that uncertainty; 3) A need to demonstrate the ability to continue excellent operations while reducing costs; and, 4) The regulatory uncertainties of the NRC license renewal process.

This paper presents Northern States Power Company's concerns and positions on issues which have arisen over the course of the last year as the final license renewal rule has been applied at our Monticello facility. The primary concerns are: 1) The NRC staff is inappropriately using the issuance of a "new license" as justification for consideration of matters beyond what is necessary to maintain the current licensing basis; and 2) The NRC staff is interpreting "maintaining the current licensing basis" in a manner that replaces a plant's licensing basis with new requirements.

The Commission has the authority under the Atomic Energy Act to structure the license renewal requirements as it sees fit to ensure public health and safety. The fact that the mechanism for renewal is a new license does not impose an automatic set minimum technical or regulatory requirements. With regard to the current licensing basis (CLB), we believe that the recognition that the CLB ensured safety and that the resulting focus should be maintaining it was a sound decision. Consistent with this decision we have prepared our application assuming that if we demonstrate the existing regulatory and code limits, utilizing the methods authorized by our CLB that we can be relicensed to operate for an additional 20 years. If generic issues are identified they will be processed through the normal regulatory oversight process and applied to whichever license (initial or renewed) is in force at that time.

We seek Commission participation in resolving these issues by providing policy level guidance to bring these issues to closure between the staff and industry. The final section of this report, Effect of Issues on the License Renewal Decision, summarizes those actions which we would ask the Commission and NRC Staff Executive Management to take.

Introduction

Northern States Power has been a key supporter of license renewal from the first efforts to develop a sound and sensible renewal process. We are serving as the Lead Boiling Water Reactor in the industry sponsored Lead Plant License Renewal Program. License renewal of the existing nuclear generating capacity is an important part of NSP's, and the nation's, energy strategy. We remain convinced that commercial nuclear power plants can be operated safely for 60 years or longer. However, in order to remain economic, the regulatory process must be focused on those elements concerned with reasonable assurance of safe operation. The Commission must provide clarification on the important policy issues contained in this paper or the process will lead to the improper conclusion that there is no economic advantage to relicensing existing plants.

The intent of this paper is to present Northern States Power Company's concerns and positions on issues which have developed over the course of the last year as the final license renewal rule has been applied at our Monticello facility. Two of our primary concerns are: 1) The NRC staff is inappropriately using the issuance of a "new license" as justification for consideration of matters beyond what is necessary to maintain the current licensing basis; and 2) The NRC staff is interpreting "maintaining the current licensing basis" in a manner that replaces a plant's licensing basis with new requirements. Ultimately, we seek Commission participation in resolving these issues by providing policy level guidance to bring these issues to closure between the staff and industry. The final section of this report, Effect of Issues on the License Renewal Decision, summarizes those actions which we would ask the Commission and NRC Staff Executive Management to take. These issues have had a direct bearing on the decision to place the Monticello license renewal application on hold. We seek to achieve resolution of these issues before we can move forward with the license renewal application.

Beyond the issues addressed in this paper regarding the license renewal rule a question has been raised concerning the relationship of the maintenance and license renewal

rules. NSP believes that the basic objectives of both rules are the same. That is, reasonable assurance that a system or structure will perform their required function. We encourage the work underway in the NRC and industry reviewing the potential for crediting the work done under the maintenance rule in license renewal space.

Background

Plant life extension work began on Monticello in 1983. In 1984, Monticello was selected as the Boiling Water Reactor Pilot Plant to evaluate the technical and economic feasibility of extending nuclear power plant life beyond the initial forty year license period established by the Atomic Energy Act. The conclusion of this work was that safe and economical operation of Monticello was feasible for at least an additional 30 years. At that time (1988), while the Atomic Energy Act allowed license renewal, no specific regulations were contained in the Code of Federal Regulations to govern the process for renewal. In order to develop and demonstrate the license renewal process, the lead plant program was instituted, sponsored by the Department of Energy through Sandia National Laboratories and the Electric Power Research Institute, and endorsed by the industry through the Nuclear Management and Resource Council. Monticello was selected as the Lead Boiling Water Reactor. NSP's Monticello plant is uniquely qualified to serve in this capacity because of the significant amount of work which has already been accomplished under the aforementioned pilot studies.

The first two years of the lead plant project were used primarily to investigate possible ways of defining the appropriate scope and depth of review necessary for license renewal. During 1990 and 1991 a significant amount of work was done, by way of public interactions with the NRC staff, to provide insights gained from the Monticello work. The final rule was promulgated by the Commission in late 1991. During 1992 the NRC staff has been working to provide regulatory guidance in the forms of a Standard Review Plan and Regulatory Guide consistent with their interpretation of the rule. Also during 1991 and 1992, NSP has been actively preparing a license renewal application for the Monticello plant.

Since the license renewal rule was promulgated, significant differences have been identified between the NRC staff's interpretation of the rule and NSP's understanding of its intent. These differences have become apparent as a result of our interactions with the staff as a pre-applicant, and in attending public meetings between the industry and the staff on the subject of plant aging and license renewal, as well as public briefings of the Advisory Committee on Reactor Safeguards. These differences are in areas basic to the philosophy of the license renewal process, such as: What does it mean to maintain the current licensing basis? These differences then cascade down to specific technical issues such as fatigue and equipment qualification. We believe the disparity between the staff's interpretation and NSP's will result in a large impact on the costs of license renewal without reasonable assurance of a corresponding increase in safety. Ultimately, these cost increases could affect our decision whether or not to pursue license renewal. This paper addresses the elements of our decision to pursue license renewal, as well as, the areas of concern that we currently have with the staff's interpretations of the license renewal rule.

Elements of the License Renewal Decision

Technical/Regulatory

First and foremost in the decision to pursue license renewal, and ultimately, extended operation of Monticello is the question: "Can the plant be operated safely during the period of extended operation?" This question is technical in nature. The requirements for answering this question are defined by the rules and regulations promulgated by the Commission. The Commission, therefore, defines the technical elements affecting the a decision of whether or not to pursue license renewal.

As cited above, the conclusion of the Plant Life Extension Pilot Studies was that there were no technical obstacles to extending the life of Monticello for at least

30 years. The basis for this conclusion was reached by comparing the Monticello plant against the existing technical requirements, as defined in Monticello's current licensing basis. This approach was confirmed by the Commission when it promulgated the final license renewal rule (10 CFR Part 54). The Commission based the license renewal rule on the principle that:

"... with the exception of age-related degradation unique to license renewal and possibly some few other issues related to safety only during extended operation, the regulatory process is adequate to ensure that the licensing bases of all currently operating plants provide and maintain an acceptable level of safety for operation so that operation will not be inimical to public health, safety or common defense and security."

The conclusion of the pilot studies has been confirmed by the work done in preparing the license renewal application. In accordance with the license renewal rule, 107 systems (representing 65% of the plant and over 14,000 components) have been evaluated to ensure that the effects of aging will not challenge their ability to continue to perform their required functions, as they do now under the current licensing basis, during the extended period of operation. These evaluations have shown that, for the most part, the existing plant activities which detect, monitor, prevent and/or correct age related degradation are adequate. Only relatively minor enhancements have been necessary to meet the effective

program criteria of the rule as we understand it. No technical obstacles have been identified which would preclude safely extending the operation of the plant or license renewal.¹

As we approach the decision to submit the license renewal application, a key factor will be whether the intent of the license renewal rule, as contained in the first principle, is being adhered to by the staff or whether the interpretation being adopted by the staff is expanding the original intent of the Commission. As was previously stated, in performing these evaluations the plant has been measured against the regulations, codes and standards which are in effect as part of the current licensing basis. Replacing the current licensing basis with new regulations or later versions of codes and standards will result in unwarranted costs being incurred, affecting the overall economics of extended operation. Introducing new requirements may give unwarranted credence to invalid or unconfirmed technical issues. This is of great concern because these potentially artificial issues could be used by opponents of nuclear power to challenge existing licenses.

Basing the license renewal rule on the foundation of the current licensing basis, as reasonably assured by the regulatory oversight process, was a sound and reasonable decision. Now, a demonstration of the stability of that decision by firmly applying the principles is necessary. Only then can utility management be sure that the technical element of the decision to proceed with license renewal does not put current plant operation at risk, is a predictable and economically a sound venture for the future. With the economic risks associated with the decision to pursue license renewal, stability of the regulatory process is essential.

¹ License renewal and actually extending operation are separate decisions. License renewal is a decision based on the ability to demonstrate safe operation of the plant. It is a precursor to the economic business decision to actually extend plant life.

Economics

The second element of the decision to proceed with license renewal deals with the economics of nuclear power versus alternative energy supplies. In 1988, as part of the plant life extension pilot studies, the first economic analysis of extended operation of Monticello was performed. The study concluded that there was a 4-to-1 benefit-to-cost ratio of continuing to operate Monticello for an additional 30 years versus building a replacement baseload fossil facility. No net present value to the customers was established under this study. It assumed that the operations and maintenance costs of Monticello would escalate at the same rate as those of the replacement fossil capacity.

Also in 1988, a second study was undertaken by NSP to quantify the effects of increasing operations and maintenance costs, as well as high capital expenditures on an ongoing basis, that nuclear power plants have experienced. The results of this study indicated that extended operation of Monticello represented a \$350 million net present value to its customers when compared to building new baseload fossil capacity.

It was confirmed that this net present value was extremely sensitive to two factors: 1) Operations and maintenance costs, and 2) Continuing capital expenditures. An annual rise in operations and maintenance costs as low as 2.25 percent above inflation in real dollars would erode the \$350 million net present value to the customer by year forty and make extended operation of Monticello equivalent to its replacement competition. This study was updated in 1991 and 1992. The updates showed that extended operation of Monticello still has a net present value of between \$180 and \$190 million to the customer. The reduction from 1988 to 1992 is attributed to a decrease in the cost of coal, refinement of the capital expenditure projections, and a more accurate assessment of increased license renewal costs. The original cost estimate for the license renewal process when

this project was initiated was \$16 million. The cost of the overall process to preserve the option of extending operations is now estimated at \$45 million. Issues introduced by the staff, such as fatigue and equipment qualification, could result in additional expenditures as high as \$40 to \$50 million, further reducing the net present value.

In addition to baseload coal facilities, natural gas, renewable energy resources and demand side management alternatives are being evaluated. Those studies, completed to date, have reinforced the current goals for NSP Nuclear Generation to control operations and maintenance costs at or below inflation, and average annual capital expenditures to less than \$10 million per year. Both goals are significantly below historical trends but are considered realistic.

These goals are essential if nuclear is going to remain a viable generating option for Northern States Power. In reviewing the recent economic decisions to shutdown Yankee Rowe, San Onofre Nuclear Generating Station Unit 1 and Trojan, various effects can be seen which demonstrate the changing economic climate which nuclear operations must adjust to if they are going to remain viable options. Primary factors at Yankee Rowe included recessionary economics, (i.e., abundant low cost power not available three years ago) and uncertain regulatory requirements. At San Onofre, primary factors were the need for major capital expenditures to meet revised regulatory and design requirements and the existence of abundant hydro and natural gas resources. Finally, at Trojan, they faced major capital expenditures for steam generator replacement, competitive natural gas options and relatively high operations and maintenance costs.

Three factors are common to each situation: 1) Alternative energy costs, 2) Operations and maintenance costs, and 3) Capital expenditures. Alternative energy costs are not within the control of nuclear power plant owners. It is incumbent upon nuclear power plant owners, then, to control their operations and

maintenance costs and capital expenditures such that nuclear power remains competitive with alternative energy supplies. Nuclear must remain competitive even when compared to short term available, low cost alternative energy supplies if we are to avoid imposed shutdowns. If the license renewal process is viewed as jeopardizing the ability to control operations and maintenance costs and/or capital expenditures, no licensee will choose to pursue license renewal.

Political/Public Opinion

Waste is the issue in the political and public arena and must be resolved before the nuclear industry can expect to advance to extended operation of nuclear power plants. Until a satisfactory long-term solution to the high and low level waste issues is realized, as perceived by the public, the contention that nuclear power is an environmentally benign power source will never be accepted by the public, or state and local governmental and policy leaders. The basic issue for extended operation is how can a nuclear power plant owner be allowed to continue to generate waste for an additional twenty years if no solution for dealing with the waste generated under its current 40 year license is at hand or at least is being moved forward. NSP recognizes that there are programs to deal with the high and low level waste issues. However, the public's level of confidence in these programs is low at best. NSP will not submit a license renewal application until there is a clear path, that also has the confidence of the public, for the federal government to solve the spent fuel disposal problem.

Regardless of NSP's decision regarding license renewal for Monticello, we are subject to State law concerning radioactive waste management. Minnesota state law requires a Certificate of Need from the Public Utilities Commission prior to increasing the on-site spent fuel storage at a nuclear plant. This authority is not preempted by federal law, because the Public Utility Commission is determining whether or not the addition of storage capacity and continued operation of the

facility is financially justifiable. The capacity of Monticello's spent fuel storage pool will be reached near or just prior to the expiration of its current license (September 8, 2010). Thus, even if a renewed license is granted, the Public Utility Commission could deny the Certificate of Need and affect a plant shutdown. Therefore, if at any point of the license renewal process it becomes evident that a solution to the high level waste issue is not likely, NSP may well decide that we will not pursue license renewal or extend plant life.

The Minnesota Public Utilities Commission recently granted a limited Certificate of Need for a spent fuel storage facility at Prairie Island. The Public Utilities Commission allowed only enough storage to permit unrestricted operation of the plant until about 2005, precisely to require a Certificate of Need process which could examine the high level waste issue at future time. It is significant to note that the Minnesota legislature, during the 1993 session, is expected to review the authority currently granted to the Minnesota Public Utility Commission over spent fuel storage additions at nuclear facilities in Minnesota. The result could be a requirement to obtain legislative permission in order to add spent fuel storage capacity at the nuclear plants, or even a reversal of the Minnesota Public Utility Commission approval, forcing premature closing of Prairie Island.

On the low level waste front, the trouble that the state compacts are experiencing and resulting increases in low level waste burial costs at existing facilities stands to significantly increase our operations and maintenance costs and ultimately, decommissioning costs.

License Renewal Regulatory Process Issues

As cited in the introduction, a number of differences have been identified between the NRC staff's interpretation of the Commission's intent and NSP's interpretation. In addition, several areas require additional clarification of the Commission's intent. These items which will be discussed below, include:

- 1) New vs. Renewed License - Does the fact that a renewed license supersedes the current license (i.e., is a "new" license) serve as justification, in and of itself, for certain regulatory interpretations (e.g., expanded scope of the technical specification limiting condition for operation criteria and accelerated schedules for closure of certain issues) which are being promulgated by the staff?
- 2) Maintaining the Current Licensing Basis - What was intended under the principles of the license renewal rule? What "other issues" related to safety outside of age-related degradation unique to license renewal can be introduced by the staff? In support of the finding that the current licensing basis is being maintained, was it the Commission's intent? a) For licensees to demonstrate via the methods already accepted under the current licensing basis that the already established limits would continue to be met during the extended period of operation, or b) For licensees to demonstrate that the design and the margins in that design are being maintained. The methods and limits should be acceptable because the regulatory oversight process is continually being implemented whether licensees are operating under the initial or renewed license.
- 3) Age Related Degradation Unique to License Renewal - Is the definition of age related degradation unique to license renewal intended to limit the necessary reviews to those aging mechanisms and their effects which have not already been considered under the current licensing basis?

- 4) Scope - Systems, Structures and Components Contained in the Technical Specification Limiting Conditions for Operation - Is it intended that any system named in or any system which fulfills a functional requirement identified in the Technical Specification Limiting Conditions for Operation be considered as important to license renewal? Or, in addition to being contained in the Limiting Conditions for Operation does it need to have a specific operability requirement associated with the safe operation of the unit to be considered "important to license renewal"?
- 5) Level of Detail Required in the Application - Is it the intent of the Commission that the level of detail contained in the License Renewal Application be consistent with Final Safety Analysis Reports for newer plants or, that contained in the Final Safety Analysis Report which formed the basis for the initial licensing of the facility?
- 6) Level of NRC Resources in Support of License Renewal Reviews and the Review Process - What is the appropriate level of resources for the NRC to have allocated to support the license renewal review process, and, what are the appropriate elements of the review process prior to submittal of the application?

New vs. Renewed License

During promulgation of the final rule, industry did not challenge the NRC's decision that the renewed license should take the form of a new license which would supersede the current license. It was not viewed as important to contest whether the Atomic Energy Act allowed renewal by license amendment or if it required a "new" license, because in either event Sections 103 and 182 of the Atomic Energy Act grant the Commission the latitude to determine what is necessary to satisfy its basic responsibilities, (i.e., public health and safety are

adequately protected). Accordingly, it was felt that the proper focus of our energies was in dealing with the specific technical requirements, rather than on the form of renewal. Put another way, it was because the technical requirements of the license renewal proceeding would be decided on their own merit and not as a result of the decision of which administrative process (amendment vs. new license) was used.

Over the course of the last year, the fact that a renewed license is de facto a new license has been cited by the staff as the reason for certain regulatory and technical decisions. For example, the following question was posed to the staff seeking clarification about the requirement for including all systems subject to operability requirements in the facility technical specifications. Is any system named in or any system that performs a functional requirement identified in the Technical Specification Limiting Conditions for Operation required to be considered important to license renewal, if there is no corresponding operability requirement, or, the corresponding operability requirement does not have any impact on the safe operation of the plant (i.e., design basis events)?

The response given by the NRC staff was that the Commission had intentionally structured the renewal process as a "new" license signaling - - that like an initial license proceeding, it was not limited to reviewing just those things relevant to safety. Therefore, any system identified in the Technical Specification Limiting Conditions for Operation, regardless of its impact on safety, would be considered "important to license renewal". A later section of this paper will address the specific concerns related to the systems added by this interpretation.

A second example occurred during discussions of the draft fatigue Branch Technical Position for license renewal before the Advisory Committee on Reactor Safeguards (ACRS). In responding to the question of why the NRC staff had to address fatigue as part of license renewal as opposed to letting the code consensus

and normal regulatory processes run their course, the NRC staff responded: "The question that I think is more pertinent to the discussion is whether or not the Commission could issue a new license without addressing issues such as fatigue or environmental qualification of electrical equipment, et cetera. I would not want anybody to think that that's necessarily the case where we could say, well, we're going to grant a new license, but we'll catch these other things as part of the process. That does not seem to make sense to me." (Emphasis added.)(Page 233, Transcripts, ACRS, Joint Meeting of the Subcommittees, July 7, 1992)

In the case of the fatigue issue, Generic Safety Issue Number 78, is currently under NRC staff review as part of the normal regulatory oversight cited by the license renewal rulemaking. It is also under review of the American Society of Mechanical Engineers' code consensus process. The staff is using the "new" license as a reason why this and other issues (e.g., environmental qualification) cannot be allowed to progress through the normal processes.

Under the authority given the NRC by the Atomic Energy Act, NRC has the responsibility to establish a process for renewing a license as it sees fit to ensure that the public health and safety is adequately protected. In both examples cited above, it is within the Commission's purview to structure the requirements that it deems necessary and sufficient to assure public health and safety, without regard to the method of licensing (i.e., new license or amendment). The decision on the scope of license renewal and need to accelerate the resolution of issues should be evaluated on their own merit. The fact that a renewed license is a "new" license should not in and of itself introduce any additional minimum technical or regulatory requirements.

Maintaining the Current Licensing Basis (CLB)

The standard for issuance of a renewed license is contained in 10 CFR Part 54, Section 54.29(a), which states: "Actions have been identified and have been or will be taken with respect to age-related degradation unique to license renewal of SSCs important to license renewal, such that there is reasonable assurance that the activities authorized by the renewed license will be conducted in accordance with the current licensing basis, ...". Put more simply, aging must be managed such that the current licensing basis is maintained.

The framework for structuring the finding in this way is provided by the first principle of the final license renewal rule which is, "... that, with exception of age-related degradation unique to license renewal and possibly some few other issues related to safety only during extended operation, the regulatory process is adequate to ensure that the licensing bases of all currently operating plants provide and maintain an acceptable level of safety for operation so that operation will not be inimical to public health and safety or common defense and security." (SOC at 64946)²

The NRC staff has suggested that the finding of adequacy contained in the first principle was limited solely to the regulatory oversight process. They further contend that the words, "some few other issues" referred to in the first principle are evidence that the Commission specifically envisioned certain issues which should be re-examined under the license renewal process. The two issues cited were environmental qualification and fatigue. (Page 27, Transcripts, ACRS, Joint Plant License Renewal/Reliability and Quality Meeting on Branch Technical Position, September 16, 1992) The NRC staff has also stated that as other issues are identified, they will be brought forward to be re-examined.

² The statements of considerations for the proposed and final license renewal rules are published in the Federal Register at 55 Fed. Reg. 29043 (July 17, 1990) and 56 Fed. Reg. 64943 (December 13, 1991) respectively. They are hereafter cited as "SOC at ____".

The interpretation forwarded by the staff ignores the words which follow the finding of adequacy on the regulatory oversight process, which continue, "... to ensure that the licensing bases of all currently operating plants provide and maintain an acceptable level of safety ..." Earlier proposed versions of the license renewal rule went further and recommended to the Commission that not only should the regulatory process be found adequate but that the current licensing bases for all operating plants be found adequate as part of the rulemaking. A specific finding on each plant's current licensing basis was not adopted because of the unique nature of each facilities' license and a concern that a broad finding of adequacy would be challenged by opponents and tie the rule up unnecessarily. However, it did serve to point out that, other than plant specific nuances, the current licensing bases derived from the current regulations, in total, are an excellent measure of a plant's safety now and in future operations.

From our review of the Statement of Considerations and all work leading up to the final license renewal rule we would conclude that the finding in the first principle, that the regulatory oversight process is adequate and ensures that the current licensing basis provides an acceptable level of safety, was intended to protect against exactly what the NRC staff is attempting to do: Re-introducing previously examined issues. It should not be used in this way. Rather, it should be used as intended, as the already established basis for evaluating the plants for license renewal.

With regard to the specific issues of fatigue and environmental qualification and whether they were specifically envisioned for re-examination as, "other issues", a simple reading of the first principle would yield that the phrase, "other issues" refers to something other than age-related degradation unique to license renewal. The SOC at 64954 states: "As a plant ages, a variety of aging mechanisms are operative. They include fatigue, ..." and, "Alternatively, degradation may have been analyzed, evaluated and acted on in the original design for only 40 years (as

is generally the case, for example, with fatigue and environmental qualification of equipment). Such situations must be analyzed for the period of extended operation as a basis for determining any additional aging management actions that may be required for license renewal." These statements lead one to conclude that both fatigue and environmental qualification are considered as age-related degradation unique to license renewal and not included as "other issues".

In reviewing the issues of fatigue and environmental qualification as age-related degradation unique to license renewal, it seems appropriate to address the other issue under the broader heading of the current licensing basis; What does it mean to maintain the current licensing basis? Does the design and its margins need to be maintained, or, the code limits established by regulations or consensus codes. This is most easily done by looking at the specific issues of fatigue and environmental qualification of equipment.

The staff, in promulgating its position on fatigue, has stated: "...the staff's approval of an operating license was based on a design, the margins in that design, defined by an analysis which demonstrated a component was acceptable for 40 years, supplemented by the other operational inspections, et cetera, required by tech specs and other operating programs. (New Paragraph) The maintenance of the current licensing basis is one of the fundamental principles of the license renewal rule." (Page 479, Transcripts, ACRS, Full ACRS Meeting, July 9, 1992)

Two aspects of the stated staff position are troubling. First, by citing "the margins in that design" as a separate element of the current licensing basis the staff infers that in order to make a demonstration that the current licensing basis is maintained, a licensee must show that no elements of the design code itself are impacted by aging. Second, it elevates the analysis itself to be on par with the current licensing basis. The definition of the current licensing basis in the rule

does not include the analyses which are maintained as a part of the design records unless the analyses were docketed and resulted in a commitment to the NRC. Licensees are not required to maintain the margins to the code limits unless specific commitments have been put in place to do so.

In addition to these issues, the staff is seeking to impose an upgrade from ANSI B31.1, which was utilized on older plants for piping designs to ASME Section III type fatigue analyses and even further to incorporate environmental effects on fatigue which have not been previously imposed on any operating plant to date. The entire approach deviates from the premise that the current licensing basis provides an acceptable level of safety.

In accordance with its current licensing basis, Monticello would utilize the following approach. For Monticello, fatigue was addressed by designing to ANSI B31.1. ANSI B31.1 utilized a stress reduction factor, if the component was going to exceed 7000 thermal cycles, to account for fatigue. In accordance with the license renewal rule, this licensing basis is required to be continued into the extended period of operation. We recognize and agree that we must demonstrate that we will remain below the 7000 thermal cycle limit or apply stress reduction factors during the extended period of operation. This should be reported in the license renewal application to a similar level of detail as was required in the initial license application. This would ensure the same level of safety is provided during the extended period of operation as is currently being provided with the same reasonable assurance. In addition to the design considerations incorporated for fatigue by ANSI B31.1 or ASME Section III, these components are subject to ongoing inspections requirements under ASME Section XI. ASME Section XI also provides the methods for evaluating and correcting detected flaws.

With regard to the environmental qualification of equipment, the basis for the NRC staff's position is captured by the following statement: "The question of the

licensing basis is an interesting one, because the current licensing basis expires at year 40. So, the qualification programs of that license would expire at year 40." (Page 26, Transcripts, ACRS, Joint Plant License Renewal/Reliability and Quality Meeting on Branch Technical Position, September 16, 1992) This position is inconsistent with the license renewal rule which contemplates maintaining the current licensing basis. The current licensing basis does not expire.

It is true that the existing qualification of many components was not carried beyond 40 years. This was not because the methods approved under the current licensing basis, IEEE-323 (1971) for DOR Guideline plants and IEEE-323 (1974) for newer plants, could not have achieved qualification for longer periods. Rather, it is only because there was no reason to extend qualification beyond the 40 year license expiration date.

Utilizing the methods currently allowed under the licensing basis for qualification, it is possible for some components to extend the qualification period out to 60 years and beyond. The position forwarded by the NRC staff is inconsistent with the principles of the license renewal rule and the rule itself. The second principle of the rule states: "... the plant-specific licensing basis must be maintained during the renewal term in the same manner and to the same extent as during the original licensing term." (SOC at 64953) 10 CFR Part 54, Section 54.33(e) requires: "The licensing basis for the renewed license includes the current licensing basis, as defined in 54.3(a);..." In accordance with the rule, licensees are required to carry the current licensing bases forward. This includes the environmental qualification of equipment and the methods allowed to demonstrate that qualification.

Age-Related Degradation Unique to License Renewal

During promulgation of the license renewal rule, the version proposed in July, 1990 introduced in 10 CFR Part 2, Section 2.758 the term, "age-related degradation unique to license renewal". At that time no definition of the specific term was offered. The intent of introducing this term in 10 CFR Part 2, Section 2.758 was to limit those challenges to the license renewal rule to those issues which were unique to license renewal, or put another way, were not already addressed under the activities of the current license.

In finalizing the license renewal rule it was determined that the treatment of age-related degradation in 10 CFR Part 54 was not limited under the proposed rule. To make it consistent with the proposed 10 CFR Part 2, Section 2.758, the treatment of age-related degradation in Part 54 was modified to age-related degradation unique to license renewal and the current definition was added. However, the current definition does not seem to match with the originally proposed intent of the term. The current definition, as contained in the final rule does not allow any age-related degradation to be found as not unique to license renewal. The "or" criteria between each of the individual elements of the definition requires that all three elements be demonstrated before an age-related degradation mechanism can be found as not unique. In addition, a literal interpretation of the individual elements makes it difficult to meet even one of the three.

At this time, NSP in preparing its application has not applied the definition of age-related degradation unique to license renewal. It has structured its determination bases on "potential significance" of a degradation mechanism to challenge the ability of a component to perform a required function. This determination is conservative and results in a much larger set of degradation mechanisms being brought under the scope of the license renewal review. It is

larger, because, it does not allow mechanisms previously dispositioned under the current licensing basis to be excluded. It is also larger, because, under the first element of the Part 54 definition, any mechanism which occurs during the term of the current license but whose effects may be different in character or magnitude after the term of the current license, without any credit for mitigating measures (such as replacement) must be considered unique. Different in character and magnitude is vague and can be broadly interpreted. Because of a concern over challenges to this term it is being very conservatively applied.

In attempts to clarify the Commission's intent, various interpretations have been discussed with the staff by industry. Similar to our own attempts to apply the definition, the NRC staff has opted to take a conservative, literal interpretation which limits the use of this definition. If the Commission's intent was to limit age-related degradation considered under license renewal to that not considered adequately under the current license, clarifying guidance needs to be issued, or alternatively, the language of the definition changed.

Scope - Tech Spec LCO Criteria

Previously, under the New vs. Renewed License section of this paper the interpretation of the fourth criteria of definition of Systems, Structures, and Components (SSCs) Important to License Renewal was discussed. That criteria requires: "All systems and structures subject to operability requirements contained in the limiting conditions for operation" be included under the scope of license renewal. The SOC at 64955 expands on this criteria to mean: "The Commission is not restricting the definition of SSCs important to license renewal to any particular mode of operation and considers equipment operability in all modes of operation to be equally important in defining SSCs important to license renewal. (New Paragraph) In sum, the Commission defines the scope of this portion of the definition of SSCs important to license renewal to include all systems or

components necessary for operation in any mode of plant operation that has operability requirements in the plant technical specifications limiting conditions for operation. This includes (1) all systems...specifically identified in the technical specification limiting conditions for operation, (2) all systems...for which a functional requirement is specifically identified...(3) any necessary supporting system..."(Emphasis added) The NRC staff has interpreted the words, "any mode of plant operation..., all systems specifically identified..., and all systems for which a functional requirement is specifically identified..., " to include all aspects of facility operation, including radwaste processing and components such as sealed sources.

The operability requirements for these types of systems do not deal with the safe operation of the power producing SSCs of the plant. Rather, the operability requirements of these systems are linked to other portions of the Code of Federal Regulations, such as 10 CFR Part 20. The inoperability of these systems does not result in shutdown of reactor or its auxiliary systems. It only results in restricted use of these systems or components as self-contained entities until repaired. When asked why these types of systems, which have no impact on safe plant operation, were being required, the NRC staff responded that the Commission had intentionally structured the renewal process as a "new" license signaling, that like an initial license proceeding, it was not limited to reviewing just those things relevant to safety.

This response fails to consider the additional guidance contained in the statement of considerations which states: "Thus SSCs important to renewal would include those relied on to remain functional during design basis events, including conditions of normal operation, anticipated operational occurrences, design basis accidents, external events, and natural phenomenon for which the plant was designed." (SOC at 64955) It is clear that the Commission intended to include those systems which deal with design basis events. Systems such as radwaste and

sealed sources are not designed in accordance with any specified design basis events.

It further amplified on its intent by stating: "The Commission expects licensees to apply the same regulatory practice with respect to operability for purposes of determining SSCs important to license renewal." (SOC at 64955) In making operability determinations, not every system specifically identified or for which a functional requirement is specifically identified in the technical specification limiting conditions for operation results in an operability determination leading to plant shutdown. We believe that the Commission's intent here was to have a subset of those systems which are contained in the technical specification limiting conditions for operation, which in addition to being specifically identified, had operability requirements directly affecting the safe operation of the reactor and its auxiliary systems. Any more conservative interpretation of this criteria results in systems and structures being included as important to license renewal which have no impact on reactor safety (i.e., prevention or mitigation of Design Basis Events).

Level of Detail

Over the course of developing the Monticello license renewal application, it has been NSP's intention to provide a level of detail similar to that contained in the Final Safety Analysis Report which contains the initial licensing basis for the plant. The Final Safety Analysis Report continues to be updated in accordance with 10 CFR Part 50, Section 50.71 and to date has been found as an acceptable level of detail to capture the essence of the licensing basis for Monticello. We believe this to be an appropriate level of detail for a license renewal application.

As we have interacted with the staff regarding the preparation of our application, the draft Standard Review Plan and Industry Reports, we have become concerned that the expectations of the level of detail necessary to satisfy the license renewal

requirements is far in excess of that necessary to provide reasonable assurance of safety. In these interactions, specific component evaluations, including identification of individual mechanisms, acceptance criteria and corrective actions have been specified or requested as part of the documented evaluations. The Commission should keep in mind that for Monticello, at this time some 107 systems, representing over 14,000 components are required to be evaluated under the Integrated Plant Assessment. Introduction of this level of detail into the license renewal application will tie up NRC and licensee resources unnecessarily.

The Industry Reports and Monticello license renewal application have been prepared utilizing similar approaches and levels of reporting the results of the required evaluations. We believe that, similar to the initial license review, this level of detail should prove adequate for most issues. Where concerns exist or additional information is required, specific information requests and responses can be docketed. Much of the information is available in backup documentation and should be accessed by site visits, audits and inspections. We urge the Commission to pay careful attention to the development of the Regulatory Guide on Format and Content, the Standard Review Plan and Industry Report Safety Evaluation Reports to ensure that only that information which is necessary to provide reasonable assurance of safety be required for submittal with the license renewal application, using the precedence of the initial licensing reviews as a guideline. Until such time that the first applications have been reviewed to provide a sufficient base of knowledge on the license renewal process the Standard Review Plan and Regulatory Guidance documents should be left in draft form to allow lessons learned to be incorporated without needing to change already established staff positions.

NRC Resources and Review

Over the course of the last year, NSP has become concerned with lack of resources being applied by the NRC in the area of license renewal. The License Renewal Directorate has been cooperative in attempting to establish meetings, but more often than not its efforts were diverted to activities necessary to support the license renewal technical or environmental rulemakings. In addition, this situation was made worse by the temporary assignment of individuals from license renewal responsibilities to work on the Advanced Light Water Reactor Program. This has resulted in a lack of meaningful interaction between NSP and the staff, as well as a general lack of progress in the area of Safety Evaluation Reports on Industry Reports. The staff seems to be waiting for the submittal of the first application before committing adequate resources to this important area. Our concern is that the staff needs to apply ample resources now during the development stages of this process, to ensure quality interaction between the staff and the industry, as well as the ability to provide the necessary regulatory guidance. During this time period while Monticello's application is on hold, we would encourage the NRC staff to complete its work on those generic areas such as the Regulatory Guidance, Standard Review Plan and Industry Reports, as well as undertaking meaningful interactions with Monticello, the Babcock & Wilcox Owners' Group and other licensees moving forward with license renewal programs.

Effect of Issues on the License Renewal Decision

The most significant effect of the issues described above is a general concern that entering into the license renewal process, without absolute recognition that the current licensing basis provides an acceptable level of safety, may result in unwarranted challenges to the existing operating license. The acceptability of the current licensing basis must be firmly established and protected under the license renewal process.

While each of the individual concerns described above, is not necessarily a roadblock to license renewal, they together indicate a lack of recognition by the NRC staff that existing plants are known entities with safe operating records established for over 20 years at the time that they apply for renewal. Further, it should be recognized that the regulatory oversight process will continue into the renewal period and will provide ample opportunity for the NRC staff to address any new safety concerns that might arise. These facts should allow the license renewal process to be focussed on those narrow issues of aging that occur uniquely during the period of extended period of operation. It will be difficult to change the minimum set from those of an initial license review to that of license renewal.

It is essential that the Commission and NRC Staff Executive Management actively participate in the license renewal arena as the process is developed. To that end, NSP would request following specific actions on the part of the Commission and NRC Staff Executive Management.

- 1) That the Commission provide policy level guidance clarifying the following points:
 - a) Although license renewal is being accomplished by issuing a new license such issuance does not impose any minimum technical or regulatory requirements beyond those necessary to support the finding specified in 10 CFR Part 54, Section 54.29. Further, the fact that a renewal is being effected by a new license does not require that the scope of SSCs important to license renewal include SSCs beyond those necessary for the safe operation of the facility, nor, does it mean that certain issues which are being addressed under the current regulatory oversight process, such as fatigue and environmental qualification, need to be resolved outside of that process, for the purpose of issuing a renewed license.

- b) The finding that the regulatory oversight process was adequate, thereby ensuring an acceptable level of safety provided by the current licensing basis, was intended to recognize the general acceptability of the regulations, codes and standards as well as the methods previously accepted for implementing them.
 - c) The definition of age-related degradation unique to license renewal was to limit considerations under license renewal to those aspects of aging not previously considered under the current licensing basis. Provide clarifying guidance of how to apply the existing definition consistent with that intent.
 - d) The technical specification limiting condition for operation criteria in the definition of SSCs important to license renewal was limited to those systems which dealt with design basis events as contained in the facility Updated Final Safety Analysis Report.
 - e) The level of detail to be provided in the license renewal application should be consistent with the Updated Final Safety Analysis Report and so reflected in the Regulatory Guidance Documents and Standard Review Plan.
- 2) That the NRC Staff Executive Management put in place adequate staff resources to support the development of Regulatory Guidance and Standard Review Plans consistent with the license renewal rule and supporting policy guidance, review of the Industry Reports, and pre-applicant interactions with NSP and other interested licensees so that a common understanding of the expectations of all parties is reached prior to the submittal of an actual license renewal application.

- 3) That a process be established, whereby, as issues arise through interactions between the NRC staff and licensees, access is readily available to NRC Staff Executive Management as well as the Commission to achieve timely resolutions.