August 12, 1982

Peter R. Bloch, Chairman
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. Jerry R. Kline
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. Hugh C. Paxton
Administrative Judge
1229 41st Street
Los Alamos, NM 87544

In the Matter of
Wisconsin Electric Power Company
(Point Beach Nuclear Plant, Units 1 and 2)
Docket No. 50-266 and 50-301
(Repair to Steam Generator Tubes)

Dear Administrative Judges:

This is to inform the Licensing Board and the parties, at the request of Judge Bloch, of recent telephone conversations between Judge Bloch and myself. On August 9, 1982, Judge Bloch telephoned to inquire about an article entitled "Utilities Given NRC Laundry List of Steam Generator Proposals," published on pages 1-4 of the August 5, 1982 issue of Nucleonics Week (copy enclosed). His inquiry was whether the Staff intended to provide information on matters discussed in the meeting described in the article to the Board and parties as part of the record in this proceeding. I responded by telephone on August 10, 1982. I informed Judge Bloch that the Staff did not intend to submit such information. The reason for not doing so is essentially contained in the last paragraph of the article. The steps described to bring the requirements into final form are expected to take some years, and at the present time, the proposed requirements are merely open for comment. Therefore, the Staff believes they have no bearing on the current proceeding. Judge Bloch and I did not discuss the substantive merits of any of the proposed requirements.

Sincerely,

Richard G. Bachmann
Counsel for NRC Staff

Enclosure:
as stated
cc w/enclosure: Service List

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# NUCLEONICS WEEK

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## UTILITIES GIVEN NRC LAUNDRY LIST OF STEAM GENERATOR PROPOSALS

NRC last week handed PWR owners a long list of proposed new requirements intended to prevent or mitigate the effects of steam generator malfunctions, covering steam generator integrity, plant systems responses to steam generator tube breaks, and radiological consequences following steam generator incidents. On top of that, NRC also alerted the utility people to a whole batch of possible additional requirements. Although the utilities organized only last week to formulate an interim response to the proposed requirements, initial indications were that some of the proposals are being viewed skeptically as to their necessity and value. NRC staff, for its part, is still conducting value impact studies which it will consider in conjunc-

tion with the utilities' responses before taking further action.

The proposed requirements were explained by NRC licensing division staff for the first time July 29 to members of the steam generator owners group at a meeting in Bethesda, Md. (NW, 29 July, 2). The purpose of the meeting, said Gus Lainas, assistant director of licensing for safety assessment, was "to obtain industry feedback relative to value impact." At the direction of the commissioners, NRC staff drew up the proposals to consider the ramifications of the Jan. 25, 1982 accident at Rochester Gas & Electric's Ginna plant, in conjunction with staff work on unresolved safety issues which had been going on well before the Ginna tube rupture. Many of the proposals stem from the Ginna event; others are based on staff observations of other events and problems at PWRs.

"A tube rupture in any plant is a tube rupture in all plants," said NRC Director of Licensing Darrell Eisenhut at one point. The July 29 proposals, added Eisenhut at another point in the meeting, will hopefully resolve the unresolved safety issues. "(Hopefully) there won't be another document," he said.

Under the category of "steam generator integrity," licensing division staff explained eight groups of proposed requirements:

**Prevention and detection of loose parts and foreign objects.** This would include secondary side inspection above the tube sheet of the entire periphery of the tube bundle, and the tube lane; improved quality assurance (QA) and quality control (QC) procedures to preclude introduction of foreign objects into the primary and secondary sides of the steam generators; and installation and operation of steam generator loose parts monitoring systems on the primary and secondary sides.

Some plants already incorporate these procedures – most notably, staff said, Rochester G&E's Ginna whose tube rupture Jan. 25 was attributed to a loose part. With regard to the frequency of secondary side inspections, Lainas said that if no monitoring system was in place by the time of a steam generator's next eddy current inspection, that an access be made for secondary side inspection. Eisenhut said that the secondary inspection might be a "one-time event" accompanied by a followup QA program. Eisenhut added that he recently saw a report on a newly delivered steam generator which, upon inspection of the secondary side, displayed "a bucket of loose parts." "Is a good QA/QC program plus a loose parts monitoring system good enough?" he asked.

**Stabilization and monitoring of degraded tubes.** NRC is proposing that licensees prepare and submit a report which identifies progressive kinds of degradation currently present or likely to occur in their plants, and which contains criteria and procedures for (a) monitoring of plugged non-leaking tubes for which rates of progressive degradation are unpredictable, and (b) stabilization of degraded tubes with potential for severences and damage to adjacent tubes. NRC staff bases this proposal upon evidence that plugged tubes can degrade further after plugging. "Sentinel" plugs which allow limited amounts of water to monitor the rate of degradation in plugged tubes have been used at Sweden's Ringhals-3 and were recently installed at Florida Power & Light's Turkey Point-4, NRC staff noted.

In response to questions from the steam generator owners group as to the necessity of this program in conjunction with a loose parts monitoring system, Lainas emphasized that foreign objects are "not the only degradation mode. . . ."

**Tube in-service inspection (ISI) program.** This would include a somewhat lengthy list of requirements itself: inspection of the cold leg sides of steam generators; maximum intervals between steam generator inspections of 48 months, compared with currently allowable intervals of 80 to 160 months; definition of "special subsets" of tubes, to avoid excessive inspection of tubes not experiencing degradation; a 100% inspection or statistically determined inspection if either more than 1% of tubes are defective, or 5% degraded; additional denting inspections; tube inspections to be conducted in response to repair of any leaks; inclusion of denting acceptance limits in a reactor's technical specifications; and reports to NRC of inspection results prior to operation of the plant if data exceeds plugging limits.

**Improved eddy current techniques.** One of NRC's reasons for this proposal is the Jan. 25 Ginna event, in which the ruptured tube had exhibited no differential signal during an eddy current inspection in April 1981.

**Primary-to-secondary leakage limits.** Here NRC would revise technical specifications for the primary-secondary leak rates so that they are consistent with applicable standard technical specifications.

**Secondary water chemistry programs.** Under this category NRC would require programs to minimize steam generator tube degradation, with the definition of the program included in the reactor's license conditions, although not specifically included in the license. Although NRC would not establish any criteria for standards such as water pH, each utility would do so, and would be obligated to explain to NRC the rationale. Utilities with operating plants which are shut down for steam generator repairs as a consequence of corrosion would be required to commit themselves to revised water chemistry guidelines prior to restart. Conrad

McCracken of NRC's mechanical engineering branch said that plants in the licensing stage now would be required to have a program of secondary water chemistry control; operating plants would be required only to make a commitment to a program if degradation occurs.

**Condenser in-service inspection program.** If a reactor exceeds secondary water chemistry limits so as to result in power reductions twice per quarter due to condenser leakage, NRC would require a license condition which commits the utility to perform condenser ISIs. This program would be included in the plant's operating procedures. Utilities with operating plants which are shut down for steam generator repairs as a consequence of corrosion when the requirement takes effect would be required to commit themselves to a program.

**Upper inspection ports installation.** In what proved to be the most controversial proposal at the July 29 meeting, NRC said it was moving toward requiring the installation of upper inspection ports in U-tube steam generators licensed after Jan. 1, 1983; installation of ports in currently operating plants would be evaluated on a case-by-case basis. NRC's rationale is that U-tube steam generators generally have only lower inspection ports. Plants which have installed upper ports experience easier evaluation of denting in the upper part of the steam generators, and easier tube removal for examination, as well as easier monitoring of the upper portion of the unit. Jack Strosnider of NRC's materials engineering branch said that eight plants in the U.S. already have such ports. Eisenhut added that some new operating licenses in process contain a commitment by the utility to install them.

Members of the steam generator owners group, however, appeared unswayed. A Florida Power & Light executive said the utility has "had them for years" at Turkey Point and not needed them. Another utility representative said installation of the upper inspection ports would cost $300,000 per steam generator "and we may get nothing out of them." In response, Eisenhut said it would be less expensive to do the work now, rather than later, when degradation in the U-bend itself occurs. Emphasizing the insurance-like nature of the ports, Eisenhut drew an analogy to problems recently discovered in Westinghouse D-2 and D-3 steam generators at Duke Power's McGuire-1 and other plants. "Who would have expected the vibration problems at McGuire?" he asked.

Strosnider said that in-house discussions among the NRC staff produced some of the same arguments raised by the utilities. The upper port installation proposal, he added, will be subjected to a value impact analysis conducted by Science Applications Inc. (SAI).

Under a separate category of "plant systems response," NRC has three groups of proposals: reactor coolant system (RCS) control during a steam generator tube rupture; safety injection signal reset; and containment isolation and reset. The RCS pressure control during a rupture provoked the most comment from the utilities.

NRC is proposing that utilities "determine optimal means of controlling and reducing pressure" emphasizing use of existing equipment; optimize procedures, techniques and systems; consider usage of the pilot operated relief valve (porv) and auxiliary spray systems; and aim for minimizing leakage, maximizing pressure control and minimizing voids (bubbles) in the reactor coolant system. The staff based its proposals on four events in which there was difficulty in managing reactor coolant system pressure following a steam generator tube rupture.

The use of the porv – which during the Ginna event remained open after one cycling and resulted in a steam bubble in the reactor head – was questioned by staff members. "Why use the porv?" asked one staff member, responding to a question by a utility person as to the advantages of using the porv over the auxiliary spray system. The staffer added, "It's not clear that if you use the auxiliary spray once or twice in the life of a plant it will be damaged. It's clear that using the porv is preferential." A member of the owners group responded that NRC needs to spell out its objectives better.

Related to the use of the porv is NRC's concern over the 30 minutes called for in reactor design for the emergency core cooling system to take over after a tube rupture. "Our concern is not (the existence) of a (steam) bubble per se," said one staffer, "but the fact that the half-hour has never been met in the instances of bubbles."

Beyond the proposed requirements, NRC licensing division staff informed the owners group last week of a whole parcel of possible additional regulations for "which no details are available yet." These include, among many others, requirements on tube sleeving design, installation and inspection; a pressurized thermal shock program; instrumentation for detection of inadequate core cooling; and a control room design review program.

The owners group was clearly not equipped to respond to NRC's proposals in the same time frame as NRC staff would like. At the conclusion of the meeting, Lainas asked owners group chairman Alfred Schmidt of Florida Power & Light when the group might give NRC its comments. When Schmidt replied "a couple of months," Lainas said, "That's a little longer than we anticipated. . . . But we're interested in a quality re-

sponse. . . . How about a meeting halfway in between to give us an idea as to the status and whether your comments are worth waiting for?" Schmidt agreed, after which Lainas said that value impact studies on the various proposals would continue.

Following the meeting with NRC, the owners group met by itself for organizational purposes. In a conversation this week with Nucleonics Week, one knowledgeable source said "certain people would respond to various issues" before the group gave NRC a collective review. The owners group is drawing on some Electric Power Research Institute (Epri) staff for some issues, he added, and is seeking information, but not staff expertise, from the Institute of Nuclear Power Operations (Inpo). The owners group should be able to give the licensing division a status report in a few weeks, the source said.

NRC, for its part, is undecided as to what form the steam generator requirements eventually will take. After the steam generator owners group submits its final comments, and SAI finishes its value impact studies, licensing division staff will come up with recommendations to be forwarded to NRC's Committee to Review Generic Requirements and the Advisory Committee on Reactor Safeguards. Only then will the final form be clear, the source added, "whether it's a rule, an order, or what." Final action will be taken by the commissioners themselves, he said. – *Jeff Yacker, Bethesda, Md.*