

CURE COMMENTS TO EQB ON DRAFT SCOPE FOR MONTICELLO:

John,

I thought it would be helpful to be specific about CURE's conclusions, expectations and recommendations. Please consider this our comment. And the previous document, the attachment to the comment. I have tried to frame this as usefully as I can. **Since there is no certain scenario for waste from relicensed reactors, we have proposed elements of a matrix** to define a range of factors that, interacting, will attempt to **scope factors in 4 (50 year) quarters**, from the establishment of an ISFSI for waste from a relicensed reactor. The requirement from PUC for analysis of a 200 year storage scenario is beyond anything evaluated by NRC. This changes the storage term assumptions of Xcel's application - from temporary to "long term". This kind of analysis for an ISFSI has not been conducted by NRC (see notes below), but their cooperation would be very useful for the exercise. I am resending the attachment. And will provide the timeline materials and supporting documentation in hard copy today.

The EIS is the major tool for independent evaluation of potential impacts. **The Contingency Assessment Timeline** we are suggesting, assumes a set of factors and scenarios, along a 200 year timeline: **2060 - 2110 - 2160 - and 2210**. 200 years, is 2/3 of the time that Yucca Mountain is expected to stay open , if it ever opens. This accomodates possible future storage - while preparing to adequately contain and monitor the waste, through at least one and likely two cycles of facility and cask replacement. This scope and its requirements will be particularly useful and relevant to the PUC economic review. We note in the attachment, the importance of assessing what wastes in addition to the fuel rods may need - over time - to be accomodated at reactor site; including old casks, LLW, GTCC, and decommissioning wastes, as federal storage sites reach capacity.

Below, under recommendations, we note the particular importance of developing 4410.2500, **"Missing and Incomplete Information"**. This may be a good tool with which to address the "uncertainty" principle. It is particularly important for analysis of economic and environmental implications. Commitment to continued operations and storage of wastes that have no assurance of permanent centralized storage outside of Minnesota -- may well be an irreversible commitment not only of economic resources, but of risks to Minnesota's natural resources, populations and economic viability. Scoping the alternatives then is a critical exercise; and will provide parameters for assessing, in addition, lost opportunity costs - of continued operations. Please attach the modeling information I sent previously to the official record of my comments.

MATRIX: As I mentioned to you, This is not our first attempt to lay factors and scenarios out along a timeline. This is an essential exercise for any evaluation of ISFSI storage, particularly involving waste from relicensed reactors. The 1995 MEQB advisory task force, recommended a similar exercise in their final report. You were, in fact, the source for the idea of using a matrix, similar to what MNDOT uses - when you actaed as public advisor in 1995. In 2003 when the legislature was considering extending storage at PI, I drafted a timeline, using Xcel's Yucca Mountain cask queue schedule. I have attached this as well. It only goes to 2100. The timeline for this review would have to go to at least 2210. Following is set of summary statements from the longer scoping exercise. There is still a welter of factors and implications to sort through. **What is now required is an informed establishment of scenarios and factors along the timeline, within these 4 quarters.** I am glad to be able to turn it over to your capable hands.

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CURE COMMENTS for EIS SCOPE
on potential impacts of long-term dry cask
storage, and continued operations
(relicensing)
at the Monticello nuclear plant

"Whats the difference?" I often hear the claim that we will need an ISFSI anyway for decommissioning. So "whats the difference" if we put a couple dozen more casks on it!? The difference is that the federal government has NO plan for waste from relicensed reactors. The GEIS for relicensing simply notes that there should be room on the pads for the waste.

A few reality checks:

- Yucca Mountain capacity will be filled by @2040.
- Last waste shipments from original licensure - if YM opens by @2015 - will leave the state no earlier than 2041.
- Original cask and facility licenses will have expired.
- Non-fuel rod waste from continued operations, and military waste multiplying beyond capacity at 5 federal sites. This waste may also remain at reactor sites.
- Waste generated under license renewal will be WITHOUT a central storage plan, unless Congressional action, additional study, permits AND funding - allow drilling in YM for additional waste from relicensed reactors.

This exercise is an attempt to scope the parameters of a 200 year timeline, with reference to the following requirements:

- a. PUC order for supplement of the application, in Attachment A (PUC briefing pprs., 3-24-05);
- b. Rules 7855.0600 - 0670, particularly .0630, which outlines "Environmental Information Required":

"The information in parts 7855.0640 to 7855.0670", to be developed.

- c. MN Statute 116D.01-06 and MN Rules for Environmental Impact Statement, 4410.

Particularly analysis required under 4410.2500.

- c. Statutory additions in 2003, requiring review of impacts of relicensing be part of the scope of review; requiring legislative review of PUC decision; and requiring application of water standard in 116C.76. I apologize that I did not realize that the statute specified 1 & 3 & not 2. Nevertheless it seems necessary to establish a baseline groundwater test.

**Environmental Scope for a
[200 year] Contingency Assessment Timeline**

Matrix Factors 4.0 - 4.9, 4.11 & 4.12 (see also 6.0)

Matrix Scenarios 4.10, plus attached timeline

Incident scenarios: sec. 10.0

Cumulative Effects sec. 6.0

8.0 Aging Effects

Alternatives: sec. 9.0

Conclusion: The conclusion of the attached exercise, per: sections 3.0 and 4.12 (summarized below) is that EQB must apply all requirements of Minnesota rules, 7855.0600 - 0670 and 4410.

Under no conditions, should Minnesota adopt NRC assumptions, GEIS or EIS conclusions for at reactor site storage.

NRC has never done an environmental impact statement for long term at reactor site storage, and the federal government has made no formal plan or provision for waste from relicensed reactors, it would be imprudent and irresponsible to accept NRC assumptions, and fail to apply the requirements of Minnesota law and statute to environmental review of the impacts of long term/indefinite storage and continued operations at Monticello - as MN law, requires. NRC's help in assembling this data, will be invaluable and - hopefully - mutually informing.

Summary Recommendations:

1. The final scoping document should specify:

- a) per: 4410.2100 Subpart 6. G - any studies that may be necessary to gather, analyze and apply the requirements of 7855.0640-0670, and particularly .0650 - to the environmental review (see 7 & 8). Please include study of historical MS river course changes, projected flow, volume and course changes - with and without current river control/dam system. Please add Corps of Engineers to list of agency advisors for information development. Please include study and basis for projection of climate change factors that may affect the river and the site over @200 year, long term storage scenario.
- b) per: 4410.2500, how EQB will scope and address the effects of "Incomplete or unavailable information", per 4410.2500, b.
- c) Please address how EQB (and NRC) will scope cumulative impacts, assuming long *term/indefinite* at reactor site storage, rather than Xcel's original assumption of temporary storage, or NRC's assumption of "interim".*This should include cumulative impacts of waste and continued operations, and of pending application for relicensing at Prairie Island, and expansion of that facility. Also of accomodation of additional waste streams, per our sec. 3.2.
- c) per: 4410.2200 and 4410.7040, what range of state agency (and local government) cooperation EQB will request, to produce a complete and interdisciplinary study of the long term and cumulative effects of indefinite at reactor site storage, and continued operations. Please provide contact information for the public for these agencies and local government officials (Met Council or Minneapolis environmental depts?)
- d) Please specify what tests or data will be collected to establish baseline conditions, including but not limited to groundwater testing. This is very important to public confidence, and monitoring - as noted in public meeting. Please specify which agencies, or local governments may be involved.
- e) Given substantial past, present, and pending investments in the upper Ms river watershed, please specify what ongoing testing programs establish baseline date. Please note which agencies and/or local governments will assess and recommend testing, monitoring or other evaluation programs going forward, for at least the first quarter of the 200 year scope.
- f) Please include information about how EQB and NRC will facilitate coordination of timelines of state and federal review so citizens can follow the process. Please provide links and information on the website.

2. **Scope selected timeline scenarios in 4 quarters** of 50 years each.

3. **Apply factors** consistently, as recommended in the outline and refined by EQB and member agencies.

4. **Consider cumulative environmental and socio-economic effects**

a central rather than a peripheral item, now that the term of storage assumption under review has been changed from temporary to long term/indefinite storage.

5. **Consider cumulative effects of multiple program failures**, over time, in

conjunction with management, maintenance, monitoring and funding concerns.

6. Seek legal opinion from the AG's office on applicability of Federal preemptions and authorities.

7. Recommend promulgation of conditions, of standards and/or criteria, based upon review of potential long term impacts of indefinite at reactor storage.

8. Scope recommendations for conditions related to state oversight of long term, at reactor site storage, as part of the product of environmental review, with input from all relevant state agencies per 4410.2200, and requirements of 116D

9. Please see procedural recommendations* (in footnote, here) in Attachment A. This section includes recommendation to hold a **technical conference to scope alternatives**.

Alternatives development: Please clarify if EQB, as originally presented, will develop an independent, but coordinated, set of DG scenarios. We assume that there will be coordination and cooperation with DOC, but we are concerned that the field of DG options not be constrained in a way that restricts development of that alternative. I have been advised that it is necessary to have a field of at least 3 scenarios to adequately develop this alternative in the record, and ensure a viable set of alternatives decision points for the Commission. Given recent legislative initiatives, it may be optimal to include exploration of combined hydrogen-wind-gas-biofuel/mass alternatives. We have suggested the possibility of PUC or Xcel putting out an RFP for these alternatives early in the process, to facilitate this. Please also advise if there is any development on question of models, per: comments and resources sent previously.

10. Please see re-notification recommendations, per DOC recommendation, at B. 2.5. We realize that this would be an unwelcome exercise, but there have been a number of developments:

- a) consideration of a 5 mile scope under 7855.0640, per DOC -
- b) accommodation of analysis of storage term assumption for "long term", rather than temporary storage, and
- c) coordination of NRC & EQB review, insofar as that may be possible without a joint proceeding. A joint proceeding is not desirable if it requires using the same assumptions. If, instead, it clarifies and elaborates the scenarios that PUC has requested be developed, to 200 years - a joint exercise could be useful.

The tool for review we are trying to 'scope' here, is related to a series of exercises that we did in conjunction with EQB review of the Florence Township Xcel application for an offsite ISFSI in 1995. The subcommittee with which I was charged as an EQB Citizens' Site Advisory Task Force member, designed the concept which became part of the report recommendation to the EQB Board. The structural idea from this timeline and matrix came out of conversations with you, when you served as public advisor, about the tools that MNDOT used to scope complex sets of factors and alternatives. This kind of exercise has long been needed. Legislators have asked for such a contingency assessment & planning tool. It could be very useful for legislative review.

Assuming Federal Authority?: In assembling the matrix factors and scenarios, we will assume that as a practical matter, NRC will exempt state authority over health and safety and the PUC decision will be an ECONOMIC decision. But, as EQB is well aware, the economic and environmental questions are inseparable. The environmental scope will shape the economic review and considerations - as well as the alternatives. It is easily arguable that the Monticello capacity is not needed for Minnesota load, going forward. So the economic question becomes a particularly challenging one. Should we put our most valuable, some would argue, water resource

- with all its attendant natural resource values - at risk to provide capacity primarily for regional and/or market electricity export? And how should we evaluate the alternatives? By what assumptions, using what models, and what variables?

Working beyond assumptions of Federal Preemption of Health and Safety? *The assumptions of Federal/NRC environmental review on matters of health and safety cannot be applied apply to the review now before PUC. NRC's assumption of "interim" storage, depends upon assurance of centralized federal storage, which has not been provided by either Congressional or agency actions - for waste from relicensed reactors. For the same reasons (at 3.0 & 4.12), the GEIS and other environmental review - are inadequate frameworks in which to review -- which NRC has never done -- the potential impacts of long term at reactor site storage(see sec. 3.0).

This raises the question of whether or not the Environmental Scope should avoid health and safety questions. These are the most fundamental responsibilities of state and local governments. What, if any, dimension of these questions should be scoped? What would most impact the economic decision before PUC? We will not likely overturn federal preemption, although we tried in the 1970's. But it may be time to revisit some of the questions that arose then. This comment takes a middle path. *Under 6.0, cumulative impacts, we've recommended that the EIS scope anticipate, at least, potential impacts to water - groundwater and the Ms. watershed/supply - under the timeline scenarios.*

Federal environmental review assumptions do not apply to the state review-- for the following reasons.

(These are elaborated under 3.0, and in 4.12):

1. NRC does not consider impacts beyond the license period of the facility - for plant or ISFSI.
2. All review assumes normal operating conditions; accident scenarios are not evaluated.
3. The assumption of no impacts for 30 years beyond closure is part of the "confidence decision" (see 3.0), not based upon full regulatory review.
4. NRC review assumes that waste will be removed (within the 30 year time frame noted above).
5. The No-Action alternative for Yucca Mountain, would leave waste on site. The DEIS & FEIS review 2 scenarios*:
 - a) Continuous oversight for 1,000 years - and
 - b) No oversight beyond 100 years.

NB: The environmental review did NOT evaluate at reactor site storage, despite the fact that it assumed indefinite at reactor site storage at 72 locations (many on major water bodies). The environmental assessment used an entirely different scenario. It assumed 5 regional sites.

6. NRC/DOE has never examined a long term storage scenario for at reactor site storage.
7. "Confidence", even in Yucca Mountain is waning; and the "confidence decision" upon which NRC regulatory action, and environmental review determination of "no significant effects" depends is being challenged by Nevada.

NRC/EQB cooperation? Plant and storage permits are not linked in NRC regulation or review. NRC has never had an instance simultaneous ISFSI and relicensing application. But they can be very helpful in filling out the EQB EIS scenarios.

Putting it into perspective: Of course, some of us...who are 'aging reactors' ourselves, would like to see these questions adequately addressed in our lifetimes. It is one thing to leave a legacy

of nuclear waste, it is quite another to leave it without assessing and planning for its future care, maintenance and monitoring - at least into the foreseeable future. 200 years, after all, is less than .01% of the half-life of the longest lived radioactive elements, which require isolation from the biosphere, according to the National Academy of Science standards for at least 25,000 years.

I look forward to further conversation, John.

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p.s. *FAILURE OF FEDERAL PROGRAM? If the No-Action alternative is triggered by failure of the federal program, these scenarios are considered the 3 most likely:

- 1) **Permanent or indefinite on site storage at 72 reactor sites**, many on key bodies of water - & water supplies. It is likely DOE would take title to waste on site or site and waste - as is permitted by their contracts with the utilities - at utility discretion. This gets utilities off the hook for costs. But DOE's track record on management is not great. No state oversight
- 2) **Regionalization of storage sites**, by DOE or *Private Contractor*. This presumes that DOE or Private Contractor takes title to waste at reactor sites. Funding sources, siting criteria or standards are unknown. Any site may have waste removed OR added to its site, without any form of state review.
- 3) **Second Site Search may be reactivated**. At least several of Minnesota's @8 candidate sites will likely still be in the running.

Before the end of the first quarter of the 200 year period. *Under several scenarios, we could have DOE sites, no state control or statutory protections at the exact point in time that maintenance and monitoring become critical.* Facility deterioration begins @2060, acute by 2090. What do we know now, about the likelihood of continuous federal oversight for 200 years? What about site and cask abandonment?

Conditions on Certificate of Need: We hope that an EIS/Contingency Assessment Timeline could be used to inform possible conditions for Certificate of Need including but not limited to standards, terms, oversights etc. The only way to ensure continuity of funding, management, maintenance, and monitoring with this many uncertainties, is to PLAN for it; create strict TERMS for any transfers of ownership. Include FUNDING assurances for maintenance, monitoring and management for at least 200 (better 300) years. And STANDARDS, to protect vital resources that would apply in as many contingencies as possible.

Minnesota Statute: 116C.705 Findings

The legislature finds that the disposal and transportation of high level radioactive waste is of vital concern to the health, safety, and welfare of the people of Minnesota. To ensure the health, safety, and welfare of the people, and to protect the air, land, water, and other natural resources in the state from pollution, impairment, or destruction, it is necessary for the state to regulate and control, under the laws of the United States, the exploration for high level radioactive waste disposal within the state of Minnesota. It is the intent of the legislature to exercise all legal authority for the

purpose of regulating the disposal and transportation of high level radioactive waste.

HIST: 1984 c 453 s 1

POSTSCRIPT

I. Advocacy of on site storage.

Possibly the most notable documentation related to the Yucca Mountain No-Action Alternative, is the number of commenters who are ADVOCATING for keeping the waste at reactor sites. This one summarizes the fundamental issue, underlying the Environmental Review of the Monticello ISFSI: "This draft EIS does not offer a reasonable alternative [to Yucca Mountain]".

"Despite the Nuclear Waste Policy Act's exempting repository siting considerations from the heart of a true NEPA analysis - the need for a repository and any alternatives to the Yucca Mountain site - this Draft Environmental Impact Statement and the proposed action are still seriously flawed in a number of ways. First, the No Action alternative, which is the only alternative to a Yucca Mountain repository development decision, is defined in such a way as to make it not only unreasonable and unsafe, but also unlawful. The National Environmental Policy Act requires that alternatives be reasonable.

This Draft EIS considers No Action to be either leaving irradiated nuclear fuel at the reactors, with no controls, for ten thousand years, or leaving it at the reactors with controls for 100 years and then with no controls for another 9,900 years. Neither case is reasonable, nor would it be permitted under the reactors' licenses that require full control of nuclear materials at the reactor site. The No Action alternative is prescribed in the Nuclear Waste Policy Act - if the Yucca Mountain site is unsuitable, the Secretary of Energy is to so inform Congress, make recommendations for future action, and wait for further direction, which assuredly would not be leaving the irradiated nuclear fuel on site with little or no control for 10,000 years. For those of us who believe, on technical grounds, that the Yucca Mountain site is unsuitable for development as a repository, this Draft EIS does not offer a reasonable alternative."

II. Environmental Impacts Fuel Cycle and Transportation: Waste Confidence Rule

The NRC's Waste Confidence Rule is codified at 10 CFR 51.23. Section 51.23(a) states:

The Commission has made a generic determination that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least thirty years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor at its spent fuel storage basin or at either onsite or offsite independent spent fuel storage installations. Further, the Commission believes there is reasonable assurance that at least one mined geologic repository will be available within the first quarter of the twenty-first century, and sufficient repository capacity will be available within thirty years beyond the licensed life for operation of any reactor to dispose of commercial high-level waste and spent fuel originating in such reactor and generated up to that time.

The result of the generic determination in Section 51.23(a) is that there is no need to consider the environmental impacts of the onsite storage of spent fuel (in environmental reports, environmental impact statements, environmental assessments, or other analyses), for the period following the anticipated expiration of the license, in reactor and independent spent fuel storage facility licensing proceedings.

Section 51.23(c) requires that environmental impacts during the term of the reactor operating license or a license for an independent spent fuel storage installation (ISFSI) be considered in a licensing proceeding. However, the underlying assumptions remain: (1) Safe disposal of radioactive waste and spent fuel in a mined geologic repository is technically feasible; (2) one or more geologic repositories will be available within the first quarter of the twenty-first century, and sufficient repository capacity will be available within 30 years beyond expiration of any reactor license to dispose of high level waste (HLW) and SNF; (3) HLW and SNF will be managed safely until sufficient repository capacity is available to assure the safe disposal of all high-level waste and spent fuel; (4) if necessary, the SNF can be stored safely and without significant environmental impacts for at least 30 years beyond the reactor license expiration at either an onsite or offsite storage facility; and (5) safe independent onsite or offsite storage capacity will be available if needed.

FOOTNOTE: Procedural recommendations.

***A. The procedural time-line should allow for additional comments on EIS scope:**

It is difficult to provide comments for the draft EIS scope, when comments are due before the supplement is ready and the parameters of federal review are clarified, and the federal scoping meeting is held. We recommend the following considerations to PUC, ALJ and parties:

1) No substantive decisions on the scope should be made in the May 9th ALJ meeting.

This is too early to determine parameters. Parties could discuss item #5?

2) EQB/PUC should allow time, after application supplement and NRC EIS scoping meeting to get final comments in - and a Final Draft Scope in place.

3)) The Department recommended that PUC allow comments on the Final Draft Scope to ensure that information development is aligned on the front end. We agree

4) Work on the EIS can proceed before this final scoping opportunity. It would be helpful to frame the scenarios and factors for evaluation.

5) As recommended in 9.0. **PUC should consider holding a technical conference on alternatives development and analysis.** This could save a great deal of time in hearings, information development, environmental review - in all aspects of the CoN proceeding. Alternatively, EQB could do this, if PUC preferred.

****ATTACHMENT A OUTLINE:**

3 changes in scope - per: PUC decision on Completeness

1. TERM OF STORAGE SCENARIOS - Long term scenario (200) years to be evaluated. See section 4. (Application assumes temporary term of storage; NRC assumes intermediate, see section 3.0)

2. SCOPE - New Area of Impact to be evaluated - 5 miles. See sections 2.0, and 6.0.

(Application examines at reactor site, or within 1 mile)

2.1 7855.0604

2.2 Locally designated significant resources

2.3 Map of population within 50 miles

2.4 Additional comments needed

2.5. Re-Notice recommendation

3. FEDERAL JURISDICTION. Change in term of storage assumption puts this review beyond any review conducted by NRC. Therefore NRC conclusions, and assumptions cannot be adopted by EQB or PUC for the purposes of this review. See section 3.0, 4.12, and 6.0.

3.1 Federal Scoping Assumptions

3.1.1 NRC GEIS/EIS assumptions for term of operating license only

3.1.2 NRC review assumes normal operating conditions: no accident scenarios

3.1.3 NRC assumes no impacts for 30 years after license termination as part of "confidence decision"

3.1.4 Waste Confidence decision (1984, 1990, 1999) is presumed to cover all contingencies: See Waste Confidence Contentions Docket 51-009 Before the Atomic Safety and Licensing Board, May 3, 2004 ([link: www.nirs.org/reactorwatch/sitepermits/ggesp50304wasteconfidencecontention.htm](http://www.nirs.org/reactorwatch/sitepermits/ggesp50304wasteconfidencecontention.htm))

3.1.5 Should we assume federal preemption of health & safety - particularly waters?

3.2 Types (and amounts) of waste stored on site likely to multiply; will decommissioning wastes need to remain on site if there is not adequate federal storage available?

4. TERM OF STORAGE SCENARIO

4.1. Factors to be scoped along a timeline

4.1.1 Cask license term and renewal; Cask materials performance; Facilities needed for handling?

4.1.2. Additional wastes at Prairie Island

4.1.3 Addition of waste from other reactors?

4.2 Scoping "Incomplete and Missing Information" required by EIS rules

4.3 **Uncertainty** - NRC GEIS for License renewal (NUREG 1437, vol 1) concludes: "For the purposes of assessing radiological impacts the Commission has concluded that impacts are of small significance IF doses and releases do not exceed permissible levels in the Commission's regulation. *Accidental releases or noncompliance with the standards could conceivably result in releases that would cause moderate or large radiological impacts.* [BUT] Such conditions are beyond the scope of regulations controlling normal operations and providing an adequate level of protection". Therefore, they are outside the scope of NRC consideration in environmental review. This is not the 'defense in depth' approach that NRC advocates. It is perhaps more accurately described as 'denial in depth'.

4.4 Factors: Costs, funding assurance for 200 years

4.4.1 Insurance (with and without Price-Anderson) for 200 years

4.5 Factors: Institutional Controls