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Docket: NRC-2020-0086

New York State Energy Research and Development Authority; Irradiated Nuclear Fuel Processing Plant, Western New York State Nuclear Service Center

Comment On: NRC-2020-0086-0001

New York State Energy Research and Development Authority; Irradiated Nuclear Fuel Processing Plant; Western New York State Nuclear Service Center

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Comment on FR Doc # 2021-05001

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General Comment

See attached file(s)

Attachments

Vaughan comment letter

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April 9, 2021

Office of Administration
Mail Stop: TWFN-7-A60M
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: Comment on proposed NYSERDA license amendment, Docket ID NRC-2020-0086

Dear Program Management, Announcements and Editing Staff:

The proposed amendment to NYSERDA's license should not be granted unless/until impacts and alternatives have been assessed in a valid environmental review process.

NRC staff have incorrectly concluded that issuance of the amendment would satisfy the three standards of 10 CFR 50.92(c). In fact, compliance with the third standard (*Does the proposed change involve a significant reduction in a margin of safety?*) has not been demonstrated. In the Federal Register notice, NRC staff mischaracterize the proposed license amendment as “simply impos[ing] an upgraded and up-to-date radiation protection plan for the Retained Premises...” in order to “replace and supersede the outdated radiation protection requirements developed at the time of licensing the irradiated fuel processing facility.” 86 Fed. Reg. 13764 (March 10, 2021). This is not a straightforward one-for-one replacement and should not be characterized as such. NRC's conclusion that there is no significant reduction in any margin of safety is unfounded.

NRC's wording (“outdated” versus “upgraded and up-to-date”) glosses over the substantive differences between the two different sets of radiation protection requirements. These two sets of requirements have coexisted for many years. Each has pros and cons that need to be compared in an environmental review process before the existing (allegedly outdated) radiation protection requirements can be properly changed in NYSERDA's license. An important part of the comparison involves the fact that, *under certain circumstances, the “upgraded and up-to-date” radiation protection requirements are substantially less protective than the existing requirements.* The following excerpt from a LLRW disposal book that I co-authored in 1990 provides a comparison of the two sets of requirements; it's a comparison that applies not just to LLRW disposal but to other applications, as here, of the two sets of requirements:

See NYS Dept. of Environmental Conservation, *Final EIS for Promulgation of 6 NYCRR Part 382: Regulations for Low-Level Radioactive Waste Disposal Facilities* (1987), Vol. II, especially DEC's response #3 to comment C-5. The federal and state LLRW performance objectives are expressed in terms of “*dose equivalent.*” No member of the public is allowed to receive a dose greater than 25 mrem/yr whole-body exposure, or 75 mrem/yr to the thyroid, or 25 mrem/yr to any other organ. Some nuclear regulatory agencies advocate a revised method of dose calculation, which uses a different definition of rem (expressed as “*effective dose equivalent*”). The revised method combines internal

and external doses and thus makes it unnecessary to have separate regulatory standards for individual organs such as the thyroid. However, if the existing state and federal limits on thyroid dose from a LLRW facility (75 mrem/yr *dose-equivalent*) were eliminated in favor of a single exposure limit of 25 mrem/yr *effective dose-equivalent*, this would allow an elevenfold increase in the allowable exposure to the thyroid. While there may be merit in using a revised method of dose calculation that combines internal and external dose into a single value, such a revision should not be presented to the public and the scientific community as a neutral or purely scientific change in calculation method. It is also being used as a *sub rosa* method of revising standards, whereby allowable thyroid dose from a LLRW facility could increase by a factor of 11 and other allowable doses would increase as discussed in section VII.

R. Headley, R. Vaughan, K. Roach, and J Weiss, '*Low-Level' Radioactive Waste: The Siting Process in New York*, 3rd edition, August 1990, at 92 (text of footnote 36).* See also page 35 ff. and cited sources.

For the foregoing reasons, compliance with 10 CFR 50.92(c) has not been demonstrated. The "updated" *effective dose-equivalent* requirements cannot properly be substituted for the existing *dose-equivalent* requirements in NYSERDA's license unless/until the "updated" requirements are shown to be equally protective. The proper vehicle for showing this, as noted above, is a valid environmental review process.

Sincerely,



Raymond C. Vaughan, Ph.D., P.G.
Professional Geologist/Environmental Scientist

cc: Marlayna V. Doell, NRC
Paul Bembia, NYSERDA
West Valley Citizen Task Force

*Copies apparently held by both New York State Library (363.1799 L912, 201-378) and Buffalo & Erie County Public Library (TD898.12.N7 L6 1990A). It's not clear from their catalog listings whether both libraries have the 3rd (August 1990) edition.