

NSP

NORTHERN STATES POWER COMPANY

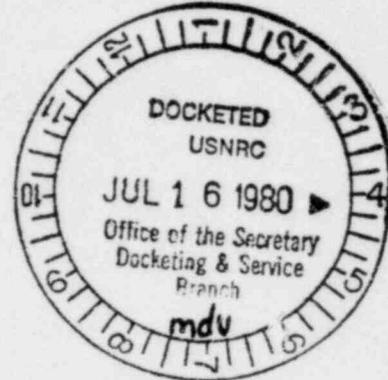
MONTICELLO NUCLEAR GENERATING PLANT
Monticello, Minnesota 55362

DOCKET NUMBER
PROPOSED RULE PR-20 (5)
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July 8, 1980

Secretary of the Commission
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attn: Docketing & Service Branch



MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

10CFR20 Request for Public Comment

It is desired to comment on two specific subjects concerning the proposed 10CFR20 revision. These are:

- 1) Limits of contamination, in terms of concentration and total activity, for disposal of material as non-radioactive waste and release of material for unrestricted use.
- 2) Limits of exposure of individuals to concentrations of radioactive materials in air in restricted areas.

In regard to subject 1), we urgently feel such limits should be developed and incorporated to 10CFR20. Presently, there is no clear regulation for the industry concerning this. As a result, site specific criteria are used at each facility, and when the various site's criteria are compared, they are frequently confusing and sometimes conflicting. Also, the equipment/personnel release limits at an individual facility may be arbitrary and hard to justify. Uniform standards would ensure consistency throughout the industry and greatly effect planning, decontamination work, waste disposal, and other activities.

There is some guidance in present regulations which can be used to help arrive at reasonable concentration and total activity limits. 49CFR173.389(e) defines radioactive material as anything greater than 2 nano curies per gram specific activity, but this is just in regard to shipping. 10CFR20, Appendix B also has limits, but just for water and air. 10CFR30, Schedules A & E have so called "energy" limits; however, a license is still required to obtain materials below these limits. Regulatory Guide 1.86 has

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limits, but they apply only if a plant is being decommissioned. NSP's release limit is 100 cpm above background using a thin windowed GM counter, for personnel and equipment or material, and 100 dpm/100 cm² smearable for equipment or material.

In order to compare to these limits, three different cases will be reviewed. Case one is the human body, case two is a standard 8.5" x 11" piece of paper, and case three is a 1/4" thick by 8.5" x 11" piece of steel.

"Releasable" activity, μCi (unidentified beta-gamma emitters, except where noted otherwise):

	<u>1</u>	<u>2</u>	<u>3</u>
49CFR173	N/A	0.009	6
10CFR30 Sh. A (Co-60)	N/A	0.002	1.5
10CFR30 Sh. B (Co-60)	N/A	1.0	1.0
10CFR30 (releasable)	N/A	(Note a)	(Note a)
Reg. Guide 1.86	N/A	0.027	0.027
NSP (smearable)	N/A	0.005	0.005
NSP (fixed)	0.8 (Note b)	0.05	0.05

- NOTES: a) There is no lower limit specified in which a license is not required in order to possess byproduct material. Therefore, the sensitivity, or detection limit capability of the instrument used becomes the lower limit.
- b) This assumes contamination is uniformly spread over entire body surface, and a thin windowed GM counter is used to "frisk" individual. Our portal monitors have roughly the same sensitivity.

There is a wide range of values in this table, and probably a much wider range than can be justified by health effects only. If the material desired to be given unconditional release is not water or air, or not amenable to being smeared (e.g. bottle of oil, barrel of sand, etc.) a GeLi analysis must be done. This is an extremely sensitive analysis, and levels well below anything that could affect the health and safety of the public can be detected. The smallest 100% organ burden for a common isotope at Monticello is 1.5 μCi for Co-60. Clearly, a limit 100 times lower than this, or 15 nano Curies, should be reasonable. If a concentration limit is necessary, a limit of 1.5 $\mu\text{Ci}/1000$ per gram, or 1.5 nano Curies/gram would clearly be defensible.

In regard to subject 2), we feel the limiting of personnel to 40 MPC hours per week, and then only allowing one occurrence per quarter is unduly restrictive. This restriction should definitely be abolished. All exposure limits are essentially based upon 5 Rem per year. It does not make sense to place limits on internal exposure using a weekly chronic exposure situation. Almost all internal exposures at Monticello are acute, and even if they were chronic, there is no reason for limiting an individual on a weekly basis, as

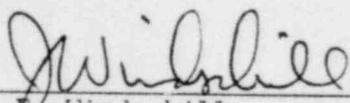
long as the yearly internal deposition equivalent of 5 Rem to the whole body, or the applicable organ limit, is not exceeded.

The practice of back-calculating to determine MPC hours from Body Burden Analysis data is equally ridiculous. What is important is the dose that will be received from an internal deposition. This should be added to any external dose, and the appropriate whole body or organ limit should not be exceeded. The MPC's should also be revised to reflect the recommendations contained in ICRP 26, which changed the whole body and organ yearly dose limits.

It is recommended that 10CFR20 internal limits be expressed in terms of organ dose, instead of MPC hours, and allow the licensee to develop his own method of assuring compliance.

Respectfully Submitted,

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