

July 3, 1987

COMMENTS OF OHIO CITIZENS FOR RESPONSIBLE ENERGY, INC. (OCRE)
ON ADVANCED NOTICE OF PROPOSED RULEMAKING, DEFINITION OF
HIGH-LEVEL RADIOACTIVE WASTE, 52 FED REG 5992, FEBRUARY 27,
1987

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1. The Commission has advanced two options for defining high-level waste ("HLW") pursuant to clause A of the Nuclear Waste Policy Act of 1982. The first would specify concentrations of fission products below which the wastes would not be considered HLW, regardless of their source of origin. The second option would retain the traditional definition of HLW, i.e., spent nuclear fuel and the wastes resulting from the reprocessing of same. OCRE favors the second option. Specifying concentrations could tempt waste generators to dilute the waste to concentrations below those specified for HLW or even to a level 'below regulatory concern', which the NRC is considering, such that large quantities of diluted radioactive materials will be released to the environment causing adverse health effects. As noted, this option also has the advantage of continuity in the regulatory scheme (52 FR 5995).

2. Clause B of NWPA authorizes the NRC to classify as HLW "other highly radioactive material that the Commission . . . determines . . . requires permanent isolation." This creates an important opportunity to place the classification of radioactive waste on a rational basis. As pointed out, the definition of HLW impacts the definition of low level waste, which is defined as everything not classified as HLW (or certain other types of material). While the wastes traditionally deemed HLW should certainly continue to receive that classification, certain wastes which are not low in radioactivity but are now considered LLW, simply because they are not spent fuel or reprocessing wastes, need to be reclassified as HLW to be consistent with their degree of hazard.

However, OCRE does not agree with the concept for defining HLW advanced at p. 5996 of the Federal Register notice because it does not encompass all radioactive materials which may practically require disposal in a repository to ensure the protection of the public health and safety. The Commission's concept of evaluating alternative, less secure disposal facilities is reasonable, but the assumption of some "intermediate" facility (now nonexistent) as the alternative is not. The Commission is correct in stating that such analyses will involve substantial uncertainties. The only reasonable alternative facility for comparison is the concept embodied in 10 CFR 61 for land disposal of LLW. Even this is fraught with uncertainties, as no long-term experience with such facilities exists. No one knows if they will isolate wastes such as Cs-137 from the environment as long as they remain hazardous. In fact, institutional control of access to the site is only required for 100 years. 10 CFR 61.7(b)(4). Ten half-lives must pass for 99.9% of a radioisotope to decay. For Cs-137, half-life equal to 30 years, this means 300 years. Even for

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Class C LLW, there is no assurance that intruders will not destroy or remove barriers or excavate deep enough to reach the waste before it has decayed away. It should give one pause to ponder that our Constitution, 200 years old, is one of the oldest and most enduring constitutions in the world. We can only hope for the political stability necessary to ensure institutional controls and preservation of disposal site barriers and integrity in the centuries to come.

OCRE proposes that HLW include any waste which, assuming its disposal pursuant to 10 CFR 61, after 100 years, results in radiation doses to humans higher than that resulting from 1987 average U.S. background radiation levels, assuming unrestricted use of the disposal site, which can include continuous habitation, agriculture, deliberate destruction of barriers, and/or excavation. The products of radioactive decay (any radioactive daughter products) shall be considered in making this determination. All exposure pathways shall likewise be considered, and calculations of doses should be conservative. This is the only definition of HLW consistent with our understanding of the hazardous nature of ionizing radiation and the uncertainties associated with waste disposal.

Note that this definition encompasses both the "highly radioactive" and "requires permanent isolation" prongs of Clause B of NWPA. Note also that health hazard is the only criterion for waste classification; costs to licensees or to the government from this expanded definition of HLW are not a consideration. Should these costs be excessive, the appropriate remedy is to raise fees from the waste generators or to reevaluate national nuclear policy.

3. In response to questions set forth for comment by the Commission, OCRE believes that there should not be any minimum total quantity of activity before a waste is classified as HLW. And, if naturally-occurring or accelerator-produced materials fall within the definition of HLW given above, then they should be classified as such.

Respectfully submitted,



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