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# Nuclear Information and Resource Service

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Nuclear Information and Resource Service  
Comments on Petition for Rulemaking from Steve Gannis  
Docket No. PRM-20-23  
59 FR 72:7746, 4/14/94  
Diane D'Arrigo, Radioactive Waste Project Director  
June 28, 1994



Nuclear Information and Resource Service (NIRS) supports the reduction of and elimination of legal doses of ionizing radiation to the public and the environment. In an equitable and healthy world, it will be a crime to expose (especially without prenotification and informed consent) the public to known carcinogens, teratogens, mutagens, etc. As we commented on extensively in the rulemaking for 10 CFR 20, NIRS supports reduction of allowable concentrations of radioactivity in air and water, including sewage, for both the public and workers.

NIRS has commented in NRC's Enhanced Rulemaking on Residual Radioactivity (ERORR) workshops and proposed rulemaking on decommissioning and cleanup standards, that cleanup of contaminated sites should be to the original background condition (as determined by local residents) before the site is released from regulatory control (for restricted or unrestricted use). Every effort must be made to isolate human-made radioactivity from the environment for the length of its hazardous life (generally calculated to be 10 to 20 half-lives). Liability and responsibility should remain with the responsible party for as long as the radioactive material is detectable using the best, appropriate detection equipment and techniques.

The basic principle is that there is no safe level of exposure to ionizing radiation. Existing background cannot be avoided, but additional exposures can be prevented. Rather than legalizing exposures, NRC's current trend should be reversed to reduce allowable radioactivity in air, water, sewage, the environment. Rather than justifying additional exposures and setting new BRC standards using other terminology, NRC should direct its efforts to eliminating and preventing radiation risks. Uncontaminated materials including consumer products and raw or reused materials such as metal and steel should be kept free of radioactive contamination. Contaminated materials must continue to be regulated and institutionally controlled to prevent exposure and release to the environment.

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NRC's current use of millirems and millirems-effective-dose-equivalent (ede) rely on unverified computer models to estimate doses, based on highly questionable assumptions. This renders the "limit" meaningless. Better techniques must be developed to verify and enforce lower doses.

Further, if a licensee notifies NRC in advance, it is quite legal to increase the 100 millirem ede limit (in 10 CFR 20) to 500 millirems ede. In ADDITION, 500 millirems ede from sewage is completely legal. We support reducing the allowable level of contamination (above natural background) to zero or as to zero as possible. Plans should be developed to achieve zero release by a date certain.

NIRS supports elimination of a legal dose, making any exposure illegal. Short of that, a 1 millirem or other reduced level is a step in the right direction, as long as it forces a lowering of the allowable contamination levels in air, water (including sewage), the environment, and for workers and the public.

NIRS opposes NRC's 10 CFR 20 standards including the 100 millirem level because:

1. Allowable doses, risks and concentrations are too high.
2. Allowable concentrations (contamination levels) for many radioactive isotopes were INCREASED when 10 CFR 20 was "updated." (This a violation of the ALARA principal--as low as reasonably achievable--since licensees were supposedly operating at lower levels than the "new" standard permits.)
3. Risks are underestimated-- NRC underestimates the risk from radiation. NRC assumes the entire population is composed of white males in their 20's and 30's, ignoring higher risk members of the public. NRC accepts too high a risk, assuming one can believe the risks are what NRC states. (Ex: As Gannis PRM cites, NRC's BRC policy supported a 1 in 285 fatal cancer risk per deregulated wastestream or practice with no limit on the number of practices or wastestreams to be deregulated! This is in addition to the 100 to 500 mr risks from other allowable sources AND 500 mr more from sewage.) The "new" (1991) 10 CFR 20 is based on ICRP (International Commission on Radiological Protection) risk estimates and recommendations from the 1970's. Nearly two decades of radiation research have been excluded from development of the NRC's standard.
4. Synergistic effects with both chemicals and other radioactive materials are completely ignored.
5. Birth defects are not calculated for beyond the 2nd generation although the majority of birth defects will occur then.

It was intended by Congress, when NRC was created in 1974, that NRC protect the public from radiation. The NRC is failing in that mission. By truly tightening US radiation standards, the NRC can better protect the public and the environment, provide jobs, clean up the country and set a precedent for the world.

NIRS recommends that NRC seriously consider the public desire to be protected from, not legally exposed to, ionizing radiation. Thank you for the opportunity to comment.