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Nuclear Information and Resource Service

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Nuclear information and Resource Service (NIRS) opposes the license renewal of the Kewaunee Nuclear Power Station for safety, security, environmental, public and worker health and safety reasons.

A) Radioactive Waste

1) So-called "low-level" radioactive waste includes all the radioactive elements as in high level radioactive waste—they simply are not in the irradiated fuel rods. They remain radioactively hazardous for just as long as high level radioactive waste and according to the US Government Accounting Office report (GAO/RCED-98-40R Questions on Ward Valley on radioactive waste pp 49-52), some "low-level" radioactive waste can give a lethal dose in 20 minutes if exposed unshielded. Specifically Class B and C can give high doses and these are the wastes for which there is no disposal from the Kewaunee Nuclear Power Station.

In the absence of permanent disposal for much of the radioactivity in so-called "low-level" radioactive waste, it makes no sense to keep generating the waste.

There is no licensed disposal for Class B or C or Greater-than-Class-C radioactive waste from the reactor, yet there is no plan or provision in the license renewal for long term management or disposal of this waste. Since mid 2008, Wisconsin nuclear waste generators do not have access to disposal for Class B and C radioactive waste so must store it onsite.
What storage capacity exists?
For how many years?
How secure is it?

Will the waste be stored or processed and stored on site? Will it be shipped away with the potential for being returned? The license renewal will guarantee continued production of Class B and C waste but the application does not address it. There is no disposal available for Greater-than-Class-C waste either. How much will be generated and where and how will it be stored?

The conditions now are much different that when the original license was granted. Nuclear waste sites have operated, closed and new ones are not available.

From the Kewaunee Power Station Applicant's Environmental Report Attachment E
[http://www.nrc.gov/reactors/operating/licensing/renewal/applications/kewaunee/kewaunee-envir-rpt.pdf]
Table E-1. Environmental Authorizations for Current Operations page E-11, all 3 licenses/permits to ship radioactive waste to licensed disposal and processing have expired, in 2008. (From Table E-1: South Carolina Radioactive waste transport permit 0044-48-08 Expires 12/31/08 which allowed transportation of radioactive waste to disposal facility in South Carolina; Tennessee Department of Environment and Conservation License to ship radioactive material T-WI003-L08 Expires 12/31/08 for shipments of radioactive material to processing facility in Tennessee; Utah Department of Environmental Quality Site Access Permit 0704004220 Expires 6/28/08 for access to land disposal site in Utah.)

Even if the permits to transport are renewed, there is no operable, available permanent disposal for Class B and C waste in the United States (outside the Atlantic, Northwest and Rocky Mountain Compacts).

It is clearly irresponsible to proceed with licensing or relicensing a reactor without consideration and provision of proper waste management. It violates the National Environmental Policy Act NEPA and NRC regulations that require compliance with NEPA.

Depending how long the waste stays on site, its condition and management, the doses to the public, worker and environment and the amount and form of the waste that accumulates, it could pose serious threats to the public, workers and the environment. The location of the reactor is unique, increasing the threat from additional nuclear waste at the site to the specific water and species.

2) High Level Radioactive Waste

In the Kewaunee Power Station Applicant's Environmental Report Attachment E Operating License Renewal Stage page E-37 inadequate utility response to state law on high level waste is reported:

> **5.10.3) The Wisconsin Public Service Commission may not certify any nuclear power plant unless the commission finds that a federally licensed facility, or a facility outside of the United States which the commission determines will satisfy the public welfare requirements of the people of the state, with adequate capacity to dispose of high-level nuclear waste from all nuclear power plants operating in the state will be available, as necessary, for the disposal of the waste and the proposed nuclear power plant, in comparison with feasible alternatives, is economically advantageous to ratepayers. (See Wis. Stats. § 196.493)**
>
> KPS Response: KPS was duly authorized by the State of Wisconsin when KPS was originally built.

THAT'S IT? One of the oldest reactors in the country is allowed to ignore the current situation in which nuclear waste is piling up at reactors across the country with no permanent way to isolate it from the environment for the eons it will remain a radioactive threat to the public and environment? The US taxpayer is paying millions of dollars to nuclear utilities NOW and will be for the indefinite future because there is not high level radioactive waste disposal and NOW and will be for the indefinite future because there is not high level radioactive waste disposal and DOE foolishly promised it. NRC then affirmed its "confidence" that the waste would be managed but is now reconsidering that. There is simply no justification for continued generation of more irradiated fuel.

3) Tritium and Routine Releases

Nuclear reactors are legally permitted to routinely release various amounts of radioactive materials into the air and water.

The public never accepted these emissions. They were imposed on us and the legal amounts and concentrations are regularly raised by the regulatory agencies (NRC and DOT) at the need of the utilities.

Despite this concession of public health and environmental risk, the nuclear utilities do not effectively monitor or report their emissions and many violated these regulations. Rather than discharging their routine radioactive releases through pipes into the public waters, the radioactivity at many reactors has leaked from the pipes, in some cases contaminating soil and groundwater. One of the radionuclides found leaking from reactors is tritium.

Tritium is radioactive hydrogen. It spreads with water. It is taken up by the organisms in the ecosystem into the same places that water goes. It can be incorporated into genetic material. Tritium has a half-life of 12.3 years so can be hazardous for 123 to 246 years.

From http://www.nirs.org/radiation/tritium/tritiumhome.htm :

> Tritium emits radioactive beta particles. Once tritium is inhaled or swallowed, its beta particles can bombard cells. If a particle zaps a DNA molecule in a cell, it can cause a mutation. If it mutates a gene important to cell function, a serious disease may result. Just as water containing ordinary hydrogen and oxygen is a component of all living cells, tritiated water can also be incorporated into the cells of the body. Tritium incorporated into the DNA of plants and animals is referred to as organically bound tritium (OBT). Organically bound tritium can deliver damaging radiation doses for a much longer time than ingested tritiated water or inhaled tritiated water vapor. Research indicates that tritium can remain in the human body for more than ten years.
>
> Routine releases and accidental spills of tritium from nuclear power plants pose a growing health and safety concern. Exposure to tritium has been clinically proven to cause cancer, genetic mutations and birth defects in laboratory animals. In studies conducted by Lawrence Livermore Laboratory in 1991, a comprehensive review of the carcinogenic, mutagenic and teratogenic effects of tritium exposure revealed that tritium packs 1.5 to 5 times more relative biological effectiveness (RBE), or biological change per unit of radiation (one rad or 0.01 gray), than gamma radiation or X-rays.

Scientific Abstracts on Tritium are summarized at http://www.nirs.org/radiation/tritium/all16abstracts.pdf and more information on tritium is available at http://www.nirs.org/radiation/tritium/accidents.htm

Before any consideration of extended operation of the Kewaunee Nuclear Power Station, all concerns about tritium releases and any other radionuclide emissions must be resolved to the satisfaction of the public.

Diane D'Arrigo, NIRS
April 21, 2010