Nuclear Information and Resource Service

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Via the internet < DGEIS@nrc.gov >

To whom it may concern,

The following comments are submitted in response to the United State Nuclear Regulatory Commission (NRC) request for public regarding Decommissioning Generic Environmental Impact Statements.

In as much as the NRC is deferring more and more of its regulations to industry self assessment to include the decommissioning process, streamlining its licensing process, and reducing inspections and oversight of nuclear power stations, the NRC should also be redefining its mission statement to overtly declare that it is formed to protect the economic interests of the nuclear industry even to the detriment of public safety, environmental quality and the democratic process.

BACKGROUND

Even after a nuclear power station ceases operation, the reactor remains dangerously radioactive for hundreds of thousands of years. The decommissioning of a reactor is described as involving the decontamination, dismantlement and/or storage of all radioactive components, structures, and site environment following the permanent closure of nuclear facilities to assure that the site radioactivity has been significantly reduced before the release of the property for unrestricted use and termination of the license of the facility. Currently, the NRC requires nuclear utilities to select and complete decommissioning operations within 60 years of the permanent cessation of operation.

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dedicated to a sound non-nuclear energy policy.

The decommissioning process itself can have environmental consequences and raise public health issues involving the contamination of workers and public through accidental spills of radioactive effluent such as tritium, "hot particle" tracking and transport of cobalt-60 and cesium-137 into previous uncontaminated areas and offsite, fires resulting in downwind smoke/radioactive particulate contamination and transportation accidents involving radioactive waste on local and interstate highways, railroads, and waterways. Additional environmental issues and health hazards exist with the ever present residual radioactive contamination from other exposure pathways including ground and water contamination and wind borne transport offsite, biological transport (contaminated animals and vegetation migrating offsite), meteorological and seismological disturbances, both inadvertent and deliberate human disturbances and sabotage.

The recognized decommissioning methods currently employed and being planned include:

1) SAFESTOR is the method which carries out a minimum of radiation decontamination work on-site and puts the reactor into mothballs for several decades to allow for radiation contamination levels to decay before sending in workers to dismantle and disturb the reactor site. The site is maintained and monitored under the nuclear utility's custodial care and liability until an approved decommissioning method
2) DECON involves the immediate decommissioning method for the prompt and rapid dismantling of the reactor site for the earliest possible release of the site for unrestricted use and termination of the license. It places the workers and civilian populations downstream and downwind and along transportation routes to the highest radiation exposure potential. DECON can also involve the " rubblization" of the large reactor containment building and other buildings where the contaminated concrete structures are simply razed to ground level with explosives and/or wrecker devices and the concrete rubble is buried under a soil cap in the foundation hole.
3) A combination of the above.
4) ENTOMB is, like it sounds, essentially the creation of a nuclear waste grave site, where the radioactive fuel is removed and the reactor's radioactive structures and components are encased in concrete below grade, including Greater Than Class C wastes. The NRC is considering removing the 60-year requirement for site decommissioning completion and providing an alternative to allow the utility to bury and encase nuclear waste onsite for up to 300 years. If the utility can analytically demonstrate that its ENTOMB will isolate radioactive contamination on-site to below 500 millirems/year, the utility can immediately terminate its license.

Following the completion of an adopted decommissioning process and the issuance of the license termination, the reactor operator/ nuclear waste generator and the Nuclear Regulatory Commission terminate all custodial care, health and environmental liability and regulatory oversight for the site. Custodial care for any residual radioactivity then transfers to a yet to be determined "third party" which can be the local community, the state, or an unspecified custodial corporation.

In 1996 the NRC subjected the entire decommissioning process to an absurd rule change designed to accommodate the industry's economic bottom line. Following the lead of then nuclear industry patriarch, Yankee Atomic Energy Company , NRC eliminated the distinction between "operating" and "disassembling", between "maintenance" and "decommissioning" of a nuclear power reactor to facilitate the rapid dismantlement of the Yankee Rowe nuclear power station. This rule change, at the instruction of the industry, was for no other reason than to speed up the decommissioning process, cut company costs, and eliminate the public scrutiny of dubious company activities.

It is an essential democratic right that every affected reactor community in the radioactive effluent discharge pathway have an opportunity to meaningful participation in pollution prevention during the decommissioning process. Without a doubt, the public's participation as a check and balance on nuclear power activities carries an economic cost to the electric utilities in schedule delays, added protective oversight and potential litigation over safety and environmental issues.

However, in an effort to continually accommodate the nuclear industry and expedite the decommissioning process, the Nuclear Regulatory Commission is further curtailing and streamlining its regulations and dismantling the public's right to meaningful participation in the oversight of the decommissioning process. The NRC actions have already effectively curtailed the affected communities' legal recourse to intervene in industry decommissioning plans and practices that potentially jeopardize public and worker safety and environmental quality.

Already in a controversial decommissioning rule change, NRC codified regulations to provide for nuclear utilities to circumvent what was formally an initial opportunity for a public hearing process in the decommissioning plan and process. NRC has redefined its regulations where a utility was required to change its license from an operating reactor license to a possession-only-license for decommissioning purposes and open up to public scrutiny under the National Environmental Policy Act (NEPA). The NRC has reclassified decommissioning as not constituting a major federal activity and an activity than can be conducted under the original operational license without the availability of a public hearing on any potential safety issues raised by a particular decommissioning process. Utilities are now allowed to submit vague plans without any public scrutiny of the actual chosen process.

Prior to the NRC rule change, the private utility operating of the Yankee Rowe Atomic Power Plant in Rowe, Massachusetts closed in 1991, piloted the controversial change in the federal oversight of decommissioning activities. Yankee Atomic Electric Company argued that waiting through a decommissioning plan approval process potentially attendant with a public hearing process might cost the utility valuable space at the Barnwell, South Carolina nuclear waste dump. Yankee then announced its intention to cut up and transport radioactive reactor components prior to the submittal of a decommissioning plan. The activity effectively removed 90% of the reactor's non-fuel residual radioactivity under regulations promulgated for the maintenance of an operating

reactor. A local community activist group, the Citizens Awareness Network (CAN), formally challenged the company plan requesting that the NRC halt the "early component removal" program until a decommissioning plan was submitted, moved through a public notice and comment process, open to public hearings and approved by the NRC. Faced with intensifying company arguments as to how the NRC could interpret the component removal program in context of its own rules, the Commission adopted the licensee's interpretation of regulations in a split vote and approved the prompt dismantlement of the closed reactor without the submittal or approval of a decommissioning plan.

CAN took the NRC to First Circuit Federal Court of Appeals in Springfield, Massachusetts where Chief Judge Juan Torruella found in CAN's favor that the NRC's adoption of the YAEC interpretation was an abandonment of the federal agency's duly-promulgated law and "utterly irrational" in denying citizens requests for public hearings. Despite this ruling which remanded the Yankee Rowe decommissioning back to NRC and a subsequent similar ruling from the Appellate Court in Boston, Massachusetts, NRC formally adopted these major changes to its decommissioning regulations in 1996. Through its own rule making process, NRC effectively cut the public out of meaningful hearings to intervene on utility decommissioning plans and processes. Neither the public nor the States can challenge the utility plans until after all decommissioning activities are finished. The new rule has essentially turned decommissioning regulation over to the nuclear utilities requiring them to provide no more than an outline of what their planned activity will be.

Under current NRC rules, the public has lost its right to review and intervene in utility processes that can amount to economic short cuts and sloppy radiation controls resulting in excessive contamination to workers, the site, and uncontrolled releases into the environment. Unfortunately, the current efforts by NRC are to be view skeptically as further dismantling of the public process through more and more GEIS applications of site specific issues which act to shelter actual company activities from the public scrutiny of discovery and cross examination of litigation provided under NEPA.

The public outcry continues for a democratic participatory process to hold utilities accountable to responsible cleanup standards that a utility and the NRC must first meet before a license can be terminated.

ISSUES OF CONCERN

There are a growing number of public health and environmental concerns with regard to the further and broader implementation of GEIS for decommissioning of power reactors (DGEIS).

1) In publicly noticing the supplemental DGEIS request for public comment, the NRC has not provided adequate information or reference documents on its intended scope of the decommissioning issue for the public to comment on.

COMMENT

The stated purpose of the current scoping process to update the GEIS is because of the many changes, the new rule in 1996, and increased industry decommissioning experience. However, the NRC has not properly clarified exactly what areas the agency intends to change or add to NUREG-0586. The licensees carrying out decommissioning or soon to be doing so), appear to have been closely involved, possibly initiating changes to help them with their ongoing efforts.

Public notice was not properly carried out for this DGEIS Scoping process or for the handful of public meetings that have been held. Many of the potential public participants known to the NRC were given cold telephone calls by the agency in request to participate only days before the scoping hearings.

It is still unclear on what aspects of decommissioning the public is being asked to give comment other than NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities."

There are numerous other associated documents, issues and proceedings currently in various process stages, which complicate and expand the issue.

For example, what is the relationship between the decommissioning sessions being held by Dominic Orlando, the ongoing development of computer codes for release and recycling of radioactive sites and materials and this Scoping process? What is the relationship to the Nuclear Regulatory Commission's actions on rulemaking for "clearance" or "release" of radioactive wastes, materials and sites? Will inclusion in this rushed process preclude evaluation of some issues on a site-specific basis? What sections of the NRC federal code stand to be altered from this process?

Numerous decommissioning activities are currently underway. How is this Scoping intended to impact those ongoing processes?

2) NRC continues to downplay the public and environmental risks associated with decommissioning through a number of potentially false assumptions made for the GEIS. These assumptions must be addressed and the true risk discovered before any further generic considerations are implemented and the supplemental Environmental Impact Statements further diminished.

NRC STATEMENT-- "Decommissioning is not an imminent health and safety problem."

COMMENT—This statement is unfounded simply by the lack of industry and regulatory experience in the field of decommissioning large commercial reactors. The statement ignores a number of primary issues, including the lack of any proven safe and environmentally viable management plan for both high and so-called "low-level" nuclear waste, the lack of health data on nuclear industry workers involved in decommissioning

operations and the long term health impacts of residual radioactivity left behind at nuclear decommissioning site.

As for the actual decommissioning operations themselves, the fact that the NRC pulls its on-site inspectors from the decommissioning reactor site, constitutes a degraded level of regulatory oversight. After a nuclear utility has lost its income from generating capacity, where closures have often been associated with a wide variety of problems, including the loss of design bases control, the drastic cutting of staffing levels, and the decline of moral and competence, where contamination levels and radioactive waste inventories have peaked, the need for stronger regulation is more appropriate, not less. The lifting of close regulatory oversight does not instill public confidence that there is, in fact, an adequate level of protection against sloppy decommissioning procedures by utilities, the lack of worker experience with experimental procedures and unanticipated worker exposure levels and economic short cuts in decommissioning operations that can elevate risk to the workers and the public. Some experimental decommissioning operations conducted by licensees (as in the case of the Yankee Rowe nuclear power station plasma arc cutting) have spread radioactive hot particles from contaminated areas into previously uncontaminated areas, potentially introducing transportation and contamination offsite (area motels, water supplies, etc.). Additionally, radioactive effluent discharges and releases from the site must be more stringently evaluated in terms of their long-term and cumulative effect on the biology and downstream/downwind populations under a precautionary principle before NRC can make such blanket statements.

NRC STATEMENT-- "It is not expected that any significant environmental impacts will result from decommissioning. Therefore, current 10 CFR 51 needs to be amended to delete the mandatory EIS requirement for decommissioning power reactors. An EIS may still be needed but this should be based on site specific factors."

COMMENT--- This statement is not wholly true. While NRC states that "significant environmental impacts" aren't expected during the decommissioning of a nuclear power station, it has published NUREG/CR-6451 "A Safety and Regulatory Assessment of Generic BWR and PWR Permanently Shutdown Nuclear Power Plants" indicating that potential significant safety concerns do exist for Post Shut Down reactors, the first stage of any decommissioning operation. Certain combinations of irradiated fuel storage configurations and decay times could cause freshly discharged fuel assemblies to self heat to a temperature where the self sustained oxidation of the zircaloy fuel cladding may cause cladding failure.

At the center of the issue is the elimination of a mandatory Environmental Impact Statement (EIS). What does and does not legitimately constitute site-specific factors in need of an Environmental Impact Statement (EIS) has become an economically driven issue rather than precautionary safety issues. When an issue is classified under the Generic Environment Impact Statement (GEIS) it is no longer an issue that can be reviewed under a site-specific public proceeding. The more issues relegated to a GEIS, the less the public is involved in reviewing and commenting or litigating any specific utility decommissioning procedure and as a consequence the speedier the public

oversight proceeding at significantly less cost to the utility. It is of great concern that the NRC has reduced the EIS for decommissioning from a mandatory document to a document that "may still be needed."

Given the tremendous historic and ongoing problems associated with nuclear waste management at all levels interaction, including so-called "low-level" radioactive waste disposal sites, the scientific issues associated with the high-level radioactive waste repository at Yucca Mountain, and the myriad of issues affecting onsite wet storage and dry storage casks (lack of QA/QC for several dry cask manufacturers and vendors), the NRC cavalier statements are unfounded to say the least. No decommissioning operation can be determined to be complete and successful without the assessement and successful disposition of the contaminated materials and irradiated nuclear fuel. Additional concerns are raised with regard to previous industry onsite burials of radioactively contaminated materials without the legacy of adequate documentation that may not be located by a limited on-site survey and not cleaned up by the decommissioning operation.

Given that nuclear waste management policy and implementation is in complete disarray, the NRC should require an EIS for site specific issues associated with the management of on-site radioactive wastes in light of such issues as ground water movement, coastal and floodplain issues, and seismology.

NRC STATEMENT-- "Technology for decommissioning nuclear facilities is well in hand and can be performed safely and at reasonable cost."

COMMENT-- This cavalier statement and assumption is not in evidence by any industry experience. The fact that the relatively small Yankee Rowe nuclear decommissioning project, after nearly $500 million in decommissioning costs, has retracted its license termination plan and did not receive its license termination approval over the issue of unresolved residual radiation standards for its nuclear power station cleanup operations should not instill public confidence that the technology is "well in hand and can be performed safely and at reasonable cost." Additional concerns arise regarding worker dose assessments and predictions for decommissioning operations at Connecticut Yankee site have been grossly underestimated by as much as 5 times with only 25% of the reactor internals cutting completed.

Clearly, no decommissioning process is completely "in hand" without a publicly accepted and acknowledged in-place nuclear waste management program. Low-level nuclear waste sites around the country are leaking and new sites are becoming every more difficult to site and license. High-level nuclear waste site characterization and licensing schedules continue to slip as the only site under consideration, Yucca Mountain, presents unresolved technological problems. Additionally, the current interim dry cask on-site storage system continues to suffer many problems related to quality control and quality assurance.

3) Under the 1988 GEIS on decommissioning, prepared to comply with the National Environmental Policy Act (NEPA), the utilities are not being required to submit adequate decommissioning plans.

COMMENT
Currently, decommissioning plans being submitted by utilities do not necessarily provide sufficient detail that clearly delineate what procedures the utilities are planning which the NRC can enforce safety regulations and quality control standards in a systematic way. Utilities are not being required to submit adequate and detailed facility descriptions, decommissioning activities and planning, radiological surveys, worker protection programs, accident analysis, decommissioning cost estimates, decommissioning technical specifications, and a decommissioning quality control/assurance plan. The utilities are not being required to provide an adequate level of detail in their Post Shutdown Decommissioning Activities Reports (PSDAR) for the potentially affected public to determine radiation exposures during decommissioning operations. Without adequate controls NRC cannot determine if an operation is proceeding safely or if sloppy handling practices and uncontrolled releases of radioactive materials are occurring unabated.

4) Under the current decommissioning rule the NRC has stripped the public of its democratic hearing process and rights in order to accommodate the utilities economic interests and the shedding of corporate liabilities.

COMMENT
Neither the public nor the State is provided with an opportunity to challenge the utility decommissioning plan until all major decommissioning activities are completed. The public hearing rights are further constrained, virtually eliminated, by limitations mandating that no public intervention into company decommissioning activities will be provided with an opportunity of discovery and cross examination. The NRC can ignore any public comments placed into the record. The NRC accomplished this by providing the utilities with a regulatory seamless transition between cessation of reactor operations and the beginning of decommissioning so that there is no change of license or license amendment process to provide the public with a right to a formal hearing with the power of discovery and cross-examination.

Under the current decommissioning rule, the licensee is not required to provide NRC with a complete decommissioning plan for approval prior to beginning decommissioning. Following station closure, the utility need only submit a PSDAR, with the required approval of NRC, which briefly outlines proposed activities, a minimum of detail with regard to estimated cost, schedules and whether any anticipated environmental impacts are exempted from site specific considerations by the Generic Environmental Impact Statement. After a 90-day holding period, the company can begin "minor decommissioning," the rapid dismantlement of radioactive systems and structures without any docketed public comment, much less public intervention, into processes that potentially impact on environmental quality and the public's health and safety. The dismantlement process is handled procedurally by the utility and the NRC as if it is merely a repair or maintenance issue for an operating facility under 10 CFR 50.59 which

provides that based on a utility assessment that no unreviewed safety issues are raised, the company can perform such experimentation without prior NRC review or approval.

5) The GEIS is not to be considered as a "stand alone" or "one-size-fits-all" document and must be accompanied by a specific, detailed, and approved decommissioning plan and site specific supplemental Environmental Impact Statement.

COMMENT
According to the 1988 GEIS, it states that a supplemental Environmental Impact Statement (EIS) based on specific site factors "may still be needed." In fact, it is absolutely necessary that a supplemental EIS be prepared to address such site-specific issues as "What accurately constitutes pre-operational background radiation levels for a specific site?" and "What residual radiation levels constitute post-operational contamination?"

The fact that NRC has allowed the Post Shutdown Decommissioning Activities Report (PSDAR) to be merely a rough sketch of what may be in fact the decommissioning method, timeline, and cost severely limits if not eliminates altogether the need for a supplemental EIS. The utilities are being allowed to pave the road of decommissioning as they travel. The limitation of detail or revelation of adequate plans severely curtails the public knowledge of not only the method but the radiological doses and the environmental impacts. In order for supplemental Environmental Impact Statements to be of value, the utility must be required to submit detailed, analyzed and binding decommissioning plans. Under a process that fairly considered public safety and environmental precautionary principles, any substantive changes to the decommissioning plan would be viewed as a change of the license and open to public scrutiny and potentially challenge.

6) The major federal agencies responsible for public health and safety issues resulting from nuclear decommissioning operations, the Nuclear Regulatory Commission and the Environmental Protection Agency, are not in agreement over what constitutes an adequate standard for cleanup for residual radioactive contamination.

COMMENT
No further action on implementing and supplementing a GEIS for decommissioning should go forward until the NRC and the Environmental Protection Agency (EPA) have come to an agreement through a Memorandum of Understanding (MOU) regarding what levels of residual radiation will be permitted for the termination of the license. Currently, the NRC and EPA are in disagreement over a difference of a NRC minimum of 25 to 500 millirem/yr. and an EPA minimum of 4 to 15 millirem/ year standard before a site is released for unrestricted public use.

7) The current decommissioning EIS or GEIS do not look beyond the reactor site boundary for areas requiring radiological remediation.

COMMENT
The NRC and the utility should be held responsible for all contamination that resulted from nuclear power operations including all clean up operations that extend beyond the site perimeter as the result of contamination that migrates through ground and surface water, "tracking" of hot particles as the result of decommissioning procedures (plasma cutting of irradiated components, etc.), or the migration of contaminated materials offsite (tools, construction blocks, soil, etc.), cessation of component removal at the site boundary line such contaminated sewage lines and other discharge piping.

8) The current GEIS is itself inadequate in its assessments of numerous hazards encountered during decommissioning operations. These issues must be addressed through a site-specific supplemental EIS to appropriately address rather than broadening the GEIS scope and content which in effect curtails and eliminates public oversight.

COMMENT
Such issues in need of a supplemental EIS include the following:

A) The inhalation of "hot particles" is not addressed in the current GEIS as a occupational hazard to workers involved in specific and unique operations at each facility. A supplemental EIS should include estimates for workers inhalation of materials of high specific activity that have been vaporized and particulated by a particular decommissioning operation.

B) All off site waste processing should be counted as decommissioning doses. A supplemental EIS should be provided to assess the site-specific doses from off site waste processing.

C) Thousands of transportation doses accumulated as shipments leaving reactor sites and traveling local roads, interstate highways and railways travel in close proximity of a variety residential areas and population densities. These site specific issues must be assessed by the licensee and made available to the affected public.

D) It is extremely difficult to determine the full extent of soil contamination given a history of poor industry documentation of onsite waste burial. This should be the subject of a thorough site-specific EIS.

E) Greater Than Class C (GTCC) wastes were never assumed to be buried in near surface landfill. However, the NRC and the industry are now considering entombment as a decommissioning option where GTCC wastes will be disposed of below grade on-site. The utility must be required to provide a supplemental EIS for the entombment option to assess the impact of near surface dumping of GTCC.

F) Offsite radioactive sediment has been allowed to accumulate in river and offshore silt. The licensees must be required to develop a supplemental EIS to assess the degree and

impact of radioactive sediments that have accumulated as a result of station operation. The supplemental EIS must then be made available to the affected public.

CONCLUSION

NIRS does not believe that the current GEIS decommissioning process should be expanded to the further minimization and elimination of the plant-specific supplemental Environmental Impact Statements.

Sincerely,

Paul Gunter
NIRS