



SIERRA CLUB

PROPOSED RULE # 72  
(59 FR 28496)

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USFRC

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COMMENTS ON PROPOSED RULE "LIST OF APPROVED SPENT FUEL STORAGE CASKS: ADDITION"  
59 Federal Register 28496, 6/2/94

1. The following excerpts from 10 CFR 72 deal directly with siting issues and indirectly with permanency issues which are the subject of several current lawsuits (Kelley v. Seilin filed in May 1993, State of Michigan, et al v U.S. DOE et al, and Northern States Power Co., et al v. U.S. DOE, both of which were filed 6/20/94.) Discussion pertinent to Davis Besse follows.

72.24(a) "A descriptor, and safety assessment of the site on which the ISFSI or MRS is to be located... If the proposed ISFSI or MRS is to be located on the site of a nuclear power plant or other licensed facility, the potential interactions between the ISFSI or MRS and such other facility must be evaluated."

72.40(c) "For facilities that have been covered under previous licensing actions, including issuance of a construction permit under Part 50 of this chapter, a reevaluation of the site is not required except where new information is discovered which could alter the original site evaluation findings. In this case, the site evaluation factors involved will be reevaluated."

Subpart E - 72.90(e)(f) "Pursuant to Subpart A of Part 51 of this chapter for each proposed site for an ISFSI... the potential for radiological and other environmental impacts on the region must be evaluated with due consideration of the characteristics of the population, including its distribution, and of the regional environs, including its historical and esthetic values. The facility must be sited so as to avoid to the extent possible the long-term and short-term adverse impacts associated with occupancy and modification of floodplains."

72.90(c)(2)(3) "Consideration of present and projected future uses of land and water within the region and any special characteristics that may influence the potential consequences of a release of radioactive material during the operational lifetime of the ISFSI or MRS."

72.100(b) "Each site must be evaluated with respect to the effects on the regional environment... both usual and unusual regional and site characteristics must be taken into account."

72.100(a)(1)(d) "East of the Rocky Mt. Front, sites will be acceptable if the results from on site foundation and geological investigation, literature review, and regional geological reconnaissance show no unstable geological characteristics, soil stability problems or potential for vibratory ground motion at the site in excess of an appropriate response spectrum anchored at 0.2g.... Site specific investigations and laboratory analyses must show that soil conditions are adequate for the proposed foundation loading."

72.122(b)(4)(e) "If the ISFSI or MRS is located over an aquifer which is a major water resource, measures must be taken to preclude the transport of radioactive materials to the environment through this potential pathway... An ISFSI or MRS located near other nuclear facilities must be designed and operated to ensure that the cumulative effects of their combined operations will not constitute an unreasonable risk to the health and safety of the public."

72.236(m) "To the extent practicable in the design of storage casks, consideration should be given to compatibility with removal of the stored spent fuel from a reactor site, transportation, and ultimate disposition by the Department of Energy."

DISCUSSION OF DAVIS BESSE SITE

As you know, the Environmental Impact Statement for Davis Besse was done some 20 years ago before the Standard Review Plan was instituted. According to the Army Corps of Engineers, older reactors were licensed under currently outdated environmental guidelines and couldn't be built on their present sites today. At the request of the International Joint Commission (which has called for elimination of radioisotopes from the Great Lakes ecosystem), the Army Corps of Engineers made a detailed study of the Great Lakes shoreline which was published in 1993. However, the data for Ottawa County, Ohio were never published either because the Corps ran out of time or money.

Davis Besse was built in a marshy wetlands floodplain. You are undoubtedly aware of the severe

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Lake Erie storm in October 1972 which caused 300 feet of dike to break, submerging the entire plant site, including the reactor building and forcing people to be evacuated by air or boat; fortunately the plant was pre-operational. There has been serious subsequent flooding of Davis Besse, particularly during spring thaws when roads leading to and from the plant are impassable due to water levels.

Given the fact that there is not now and there may never be a permanent HLRW repository for commercial reactor fuel and the fact that the NUHOMS 24P and 52B casks are non-transportable, any distinction between so called "temporary storage" and "permanent disposal" of this waste is moot.

The Davis Besse site cannot even meet the NRC's bare minimum siting criteria for an above or below-ground "low-level" radioactive waste disposal facility per 10 CFR 61 which "contains common sense siting requirements (that) the NRC views as minimum...whether or not engineered enhancements (concrete) are used. The NRC siting requirements are primarily directed at aspects to be avoided:

- A. Sites should be avoided (with) known natural resources
- B. A prospective site must be well-drained and free of flooding or frequent ponding.
- C. The site should be located far enough above the water table to prevent ground water intrusion.
- D. Sites and areas where seismic activity and erosion...occur...must be avoided." (1)

In several documents, the NRC, itself, opposes at-reactor storage of LLRW "beyond 5 years as a significant safety and environmental matter that would divert the plant operator from its main task of reactor operation and make it difficult to determine if radioactive releases were from the reactor or the facility." (2) From 10 CFR 61, "Sites must not be located in areas where nearby facilities...could significantly mask or interfere with the disposal facility's environmental monitoring program."

A May 24, 1988 study (attached) entitled "An Evaluation of the Four Licensed and Operating Nuclear Power Plant Sites in Michigan for Co-Location of LLRW Isolation Facility" prepared by Environmental Resources Management for the Michigan LLRW Authority concluded:

None of the four nuclear power plants in Michigan are suitable sites for co-location of a LLRW isolation facility (due to) intense geological processes such as mass wasting, erosion, poor drainage...the shoreline setting of each of the nuclear power plants does not offer the safety and security of alternative non-shore sites. Wind-driven flooding and seiches will undoubtedly play an important role in the integrity and longevity of the site and facility throughout its life.

The NRC is also aware of the 12/30/93 letter (attached) from U.S. EPA Region 5 Regional Administrator Valdas Adamkus to the NRC which states:

Your agency has assessed dry cask storage systems generically and has also evaluated the environmental impacts of them generically. We believe the potential for significant adverse impact to either Lake Michigan or the Mississippi River (valuable natural resources providing drinking water and recreational opportunities for many people) is real and was not fully assessed in the generic environmental assessment prepared for the dry cask storage process...The site specific conditions and the valuable resources of Lake Michigan and the Mississippi River warrant a full and complete evaluation of the impacts and review by other Federal and State agencies as well as the interested public.

The 1/30/94 reply to Mr. Adamkus from the NRC's Robert Bernero is completely inadequate as is the NRC's March 1994 "Draft Environmental Assessment and Finding of No Significant Impact" because no consideration is given to the site's unsuitability even for LLRW per the NRC's own admission, and "new information which could alter the original site evaluation findings" (see below) is ignored. Per recent phone conversations, the U.S. EPA considers this matter unresolved.

Below are several findings of fact from court documents presented during the September 1986 and June 1987 hearings regarding LLRW sludge disposal on site at Davis Besse which the State of Ohio vigorously opposed. These constitute "new information...both usual and unusual regional and site characteristics...which could alter the original site evaluation findings...and must be taken into

account."

A. State expert witnesses, Mr. Pavey and Mr. Guy, geologists, and Mr. Voytek, a hydrologist, were astonished that TE had provided no hydrology study and stated that TE's geological studies done in 1970 related to construction of Davis Besse were inadequate and outdated and revealed a limited understanding of soil types, permeability, water flow patterns on site, underground aquifers in the Navarre Marsh area and response to changes in Lake Erie levels or to flooding. Former Attorney General Celebrezze described TE's geology studies as "cursory, flawed, oversimplified, and superficial." (Transcript, p. 49)

B. The State of Ohio testified that there had been major technical and equipment advancements in the last decade in both geology and hydrology. The process of deep excavation in the past usually smeared evidence of sand and gravel layers, of cracks, of soil permeability, and of tiny water flow pathways. Bore logs were frequently deceptive where parts of the core were missing.

C. The State pointed out the similarity of till, glaciolacustrine, clay and sand patterns of soils for the whole Great Lakes area and especially for Ottawa County with its widespread marsh areas. The State reviewed evidence of early glacial movements in soil patterns and concluded that there was an upper till aquifer which, when saturated, drained into Lake Erie, the Navarre Marsh, and the Toussaint River.

D. The State cited indications of drainage pathways - some lateral and then vertical into ground water and the bedrock lower aquifer. Mr. Pavey insisted that by all indications, the water in the glacial sediments connected to the bedrock. Using "The Soil Survey of Ottawa County" by Gordon and Huebner, the State supported its findings of cracks, fractures, thin seams, lenses, and former tree root flow paths (from early forests) to account for drainage down to the ground water aquifer from the till above. Even one of TE's own borings (B-125, ATEC Assoc., Inc., 1974) documented the presence of sand layers.

E. Both the State of Ohio and TE agreed that the limestone-dolomite bedrock was highly permeable and that ground water levels were responsive to weather, seasons, Lake levels, river levels, and marshlands. When high northeast winds raise the Lake Erie water levels at the west end, the groundwater levels also rise. After a storm, the flow of both gradually reverse. TE verified the extent of the ground water system and its permeability from the wide radius affected by its dewatering procedures in the early 1970's. The State observed that ground water was released into Lake Erie through the permeable bedrock that extends into the Lake. The State contended that all of northwestern Ohio depended on the same groundwater bedrock aquifer system which included the entire Ottawa Marsh area.

Due to the lack of a permanent repository or MRS any time in the foreseeable future, the distinction between so-called "temporary storage" and permanent radioactive waste disposal are mere semantics especially in the case of a serious spill and resultant contamination at an environmentally unsuitable site like Davis Besse where "short and long-term adverse impacts associated with occupancy and modification of (a) floodplain...potential release of radioactive material during the lifetime of the ISFSI...(and location) over an aquifer which is a major water resource" have been inadequately dealt with.

Furthermore, "projected future uses of land and water within the region" are impossible to make given the unknown length of time this waste may remain on site and the options for both cask and reactor license renewal beyond 20 and 40 years respectively and the fact that no known man-made structure can last for the length of time that this waste must be isolated from humans and the environment. If an MRS or repository ever become available, this waste may have to be repacked. Each handling of this waste increases the likelihood of an accident, spill, contamination, worker and/or public exposure.

Decommissioning and decontamination of reactors and reactor sites remains uncertain at best. 9.2 and 9.3 of the Draft SER state, "At this time, it is not known whether demolition and removal of the HSM can be performed by conventional methods...The reinforced structure of the HSM, for example, will require considerable effort to demolish." Of course, in its typical fashion of putting off until tomorrow what it cannot deal with today, the NRC considers "ease of decommissioning (a) secondary

consideration."

2. You are aware of the controversy regarding whether 10 CFR 72.48 which pertains to Specific Licenses can be used by those issued General Licenses under Subparts K and L. This issue remains unresolved because the NRC General Counsel has not issued a legal interpretation despite a 2/14/94 request to do so from the NRC's Charles Haughney (copy attached). Because this issue can only be resolved through NRC rulemaking, inclusion of the text of 10 CFR 72.48 as # 9 in Draft Certificate 1004 for the NUHOMS-24P and 52B casks is improper.

In a 10/1/92 NRC memorandum regarding a 7/24/92 meeting with Pacific Nuclear Fuel Services Inc. (now VECTRA) regarding certification of the NUHOMS cask, the NRC states, "The only way that 10 CFR 72.48 may be involved is via a site-specific license."

In a 1/31/94 NRC letter, the NRC states, "Subparts K and L of 10 CFR Part 72 are silent on cask SAR and certificate changes after the final rule. The NRC staff is currently contemplating rulemaking to clarify these issues."

A 6/3/94 memorandum from Mr. Sturz to Mr. Haughney regarding a 5/19/94 meeting between the NRC and SNC stated:

Staff indicated that it had written a memo to the Office of General Counsel requesting an interpretation of the applicability of 72.48, that it had not yet received a reply to the request, that the licensee can make its own interpretation of the regulations, and that rulemaking may be considered to clarify the regulation. Pacific Sierra Nuclear (SNC) related that the Arkansas Nuclear Plant (ANO) need to load two casks before its next outage presently scheduled for March 1995. The utility wants to use the longer VSC 24 cask currently the subject of the requested amendment 1 to the SAR. In order to meet this schedule, casks are needed by this fall.

A 6/2/94 letter from Entergy Operations informs NRC's Robert Bernero that it intends to make modifications to the VSC 24 SAR for use at ANO by applying the provisions of 10 CFR 72.48, that based on its 10 CFR 72.48 evaluation, Entergy had directed SNC to begin fabricating fourteen casks of increased length to accommodate ANO's longer CE 16 x 16 fuel, and that Entergy intends to continue using 10 CFR 72.48 in the future.

In his 2/14/94 memo to the NRC's General Counsel, Mr. Haughney states, "This section (72.48) clearly and applies to specific licensees issued individual licenses under Part 72." Yet the 6/3/94 NRC memorandum from Sturz to Haughney seems to give General Licensees the green light to interpret 10 CFR 72.48 as they see fit before the General Counsel rules on that part of the Code.

There is no provision in Subparts K or L of 10 CFR 72 that permit a General Licensee to change a vendor's SAR. Nor do Subparts K or L allow a vendor to modify its SAR or C of C. Cask vendors are not licensed under 10 CFR 72.40. The site specific license provisions of 10 CFR 72 apply to operators of spent fuel storage installations not to cask vendors.

Since the Code is silent on a process to change a generic cask design by changing an SAR or a C of C, the NRC must use a rulemaking procedure which provides for public comment and proprietary release. To issue a general license to a cask vendor so a cask can be used anywhere and then to permit virtually unlimited site specific changes is contradictory and not in keeping with the intent of generic rulemaking. The cask vendors, the NRC, and the utilities can't have it both ways.

**Transfer cask and related issues:**

A. 10 CFR 72.234(c) states, "Fabrication of casks under C of C must not start prior to receipt of the C of C for the cask model." The NRC has just granted VECTRA an exemption to begin transfer cask fabrication (but not use) "to have the necessary equipment available for use by DBNPS in mid-1995, and thus enable DBNPS to maintain complete full-core off-load capability in its spent fuel pool following the refueling outage scheduled for early 1996." This is yet another example of the NRC allowing the vendor to put the cart before the horse, bending NRC rules to facilitate the perpetuation of the industry. Seeking public comment appears to be nothing more than going through the motions and providing comments is an exercise in futility because cask approval seems to be a fait accompli.

The situation is similar to utilities supposedly proceeding at their own risk under limited work authorizations prior to issuance of a reactor construction license. Once the investment was made, a construction license was a certainty as is a certificate of compliance.

B. It is our understanding that one transfer cask will be shared by several nuclear power plants around the country. We are concerned that in the event of problems and the need to off-load the fuel (as in the recent situation at Palisades), a transfer cask may not be available in a timely manner due to inclement weather or because the TC, itself, has experienced problems or is being used elsewhere.

C. We are concerned that the crane used for fuel handling in the spent fuel pool building is a single failure-proof device. The C of C and SER discuss drop analyses of 15" up to 80". There is no discussion of drop accidents within the spent fuel pool building such as a drop onto the building floor or a drop of the TC into the spent fuel pool, itself, which would surely damage the fuel assemblies in the pool. Both these drops are considerably greater than 80 inches!

D. We remain concerned about possible jamming of the transfer cask in the spent fuel pool. What would happen to the cask if the jammed fuel could not be extricated? Would the entire 40 ton TC be left in the fuel pool?

4. It is our understanding that the test revealing the faulty welds at the Palisades plant was conducted in July just before the cask was filled, but the test was not reviewed. This raises serious questions about NRC oversight and requirements for proper cask fabrication by licensees.

7. We are concerned about the presence of burrowing and other nuisance animals that have posed problems at other waste sites. It seems likely that insects, animals, and/or birds will be attracted to the warm air coming from the outlet vents. We remain concerned about vent blockage particularly from insects such as paper wasps which build huge nests and swarms of midges common to the Great Lakes which can completely cover and block screening and vents.

5. We remain concerned that the fuel will not be tested for leaks using penetrating dyes, eddy current, sipping or ultrasound prior to canister loading despite the fact that some of the rods in the spent fuel pool will be nearly 20 years old. Exactly how will "grossly breached" fuel be ultimately handled and shipped off site?

6. We think additional radiation monitoring should be required, particularly in light of B.3.1 of the Draft SER which states, "Dose rates calculated by the vendor for different locations around the standardized NUHOMS design are significantly higher than those determined for previous NUHOMS designs...the relative dose rates for this design are still expected to be higher than comparably calculated dose rates for earlier NUHOMS designs. These relatively higher dose rates are not consistent with the objective of maintaining occupational exposures ALARA. Site-specific applications with this design should provide detailed procedures and plans to meet ALARA guidelines and 10 CFR 20 requirements with respect to the operation and maintenance of this standardized NUHOMS ISFSI design."

7. We question how the higher 55,000 MWD/MTU burnup fuel now being used in PWR's will be handled since the NUHOMS 24 is rated to handle only 40,000 MWD/MTU burnup fuel.

8. We remain concerned about the possibility of insufficient drying of the fuel before placement in the DSC. We do not feel that the issue of corrosion of stainless steel has been adequately evaluated especially under conditions of indefinite duration. While stainless steel corrodes less rapidly than carbon steel, even the plumbing fixture industry is finding unexpected stainless steel pitting and corrosion under conditions far less intense than those in a DSC.

9. The issue of sabotage does not seem to be adequately addressed in the Draft SER particularly in view of the 1993 bombing of the World Trade Center in New York and the ease with which a disturbed individual recently breached security and remained undetected at a U.S. reactor. Explosive technology has become very sophisticated in the last 15 years since the NRC and Sandia Laboratories studied the effect of sabotage on shipping casks in the March 1979 NUREG-459 - "Generic Adversary

Page 6 of 6 -Kline

## Characteristics Summary Report".

(1) Atton Assoc. Inc., "Explanatory Guide to 10 CFR 61," U.S. NRC, Div. of LLW and Decommissioning, Office of Nuclear Material and Safeguards, Washington, D.C., 1989, pp 5 & 6.

(2) U.S. NRC Generic Letter 81-38, 1/10/81; Generic Letter 85-14, 8/1/85; NRC Information Notice No. 90-09, 2/5/90; SECY-90-318, 9/12/90; Midwest Compact "Frequently Asked Questions and Answers About LLRW Disposal and the Midwest Compact," St. Paul, MN, Fall 1991, Question 1.8.

\* Affiliation for identification purposes

These comments will be mailed  
with attachments.