

contentions by reference (ii) address PFS's suggestion for redrafting the contentions into subcontentions, and (iii) classify each Contentions into one of four specified categories.

DISCUSSION

I. Response to Certain Specific Requirements of the Order.

A. The Adoption by Reference of Other Participant's Contentions.

Castle Rock's incorporation of the contentions of the State of Utah is both permissible under the rules and sensible. Section 2.714(b)(2) requires that each contention "consist of a specific statement of the issue of law or fact to be raised or controverted," and that such statement be supported by (i) a brief explanation of the bases of the contention; (ii) a concise statement of the alleged facts or expert opinion which support the contention, together with references to supporting sources or documents, and (iii) sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact, including references to specific portions of the application which a petitioner disputes or believes are incomplete. See 10 C.F.R. § 2.714(b)(2). Section 2.714(b)(2) contains no requirement that an intervenor have personally conceived of, drafted, researched, commissioned, or produced each contention or related evidence. It merely requires that the information be there. Section 2.714(b) certainly does not require that separate intervenors do redundant research and writing, needlessly wasting thousands of dollars having lawyers down the street from each other simultaneously produce almost identical contentions. In fact, in response to a challenge to contentions that seemed to be a word-for-word copy from another intervenor in a prior proceeding, the Commission explained:

We decline the invitation to penalize the alleged lack of originality in framing contentions. . . . Originality is not a pleading requirement. If fatal defects result from

this alleged method of pleading contentions, they can be addressed in specific objections to the discrete contentions.

Commonwealth Edison Co. (Byron Nuclear Power Station, Units 1 and 2) 12 NRC 683, 198-NRC LEXIS 4, *12 (1980). When an intervenor incorporates by reference contentions, explanations, and supporting documents submitted by another intervenor, the Licensing Board, Staff and applicant obtain all of the information they need to ascertain whether a material dispute of fact or law exists between the intervenor and Applicant.³ Because Castle Rock's incorporation of the State of Utah's Contentions satisfies all of the pleading requirements of 10 C.F.R. § 2.714(b)(2), such contentions should be considered on the merits and admitted.

In addition, permitting Castle Rock to incorporate by reference the State of Utah's contentions will facilitate a thorough and complete exploration of all issues in this Proceeding. As an abutting landowner, resident of the Skull Valley, and private organization, Castle Rock will bring additional evidence, supplemental arguments, and its unique viewpoint to the issues raised in the State of Utah's contentions. In its attempt to evaluate the adequacy of the Application, the Licensing Board only stands to benefit from such additional evidence, arguments and viewpoints. Any potential for duplication or confusion can be solved by orders requiring coordinated discovery.

³ Castle Rock could have at the time of filing the Contentions, could now, and upon request from the licensing board will, simply download the State of Utah's contentions, physically incorporate them into Castle Rock's Contentions, attach the State of Utah's exhibits (and possibly an affidavit certifying that one of its lawyers or experts has in fact read all of the relevant information), and file them as Castle Rock's own. Castle Rock believes that, in a proceeding where the pleadings are hundreds of pages in length, avoiding unnecessary duplication of already existing information is the best interest of all.

The caselaw cited by the Staff is inapposite. The Staff cites Consumers Power Co. (Big Rock Point Plant), LBP-80-4, 11 NRC 117, 112 (1980) for the proposition that a contention incorporating others by reference "fails to present a litigable issue." A close reading of Consumers Power Co., however, indicates that the contention at issue in that case redundantly incorporated all of the same intervenor's previous contentions by reference, and thus, "is not a contention in itself." Id. Castle Rock has not inserted a contention redundantly incorporating its twenty-three previous Contentions; rather, it has attempted to conserve the resources of all parties involved by incorporating the State of Utah's contentions by reference—as opposed to—unnecessarily duplicating the State of Utah's arguments and evidence. Castle Rock should be permitted to pursue each of the incorporated contentions.⁴

B. PFS' Suggestions Regarding Subcontentions.

Castle Rock does not object in principle to the redrafting of its Contentions to include subcontentions. However, Castle Rock objects to PFS's descriptions or summaries of Castle Rock's Contentions. In PFS's attempt to re-draft the Contentions to include subcontentions, PFS often entirely or partially omits important arguments, theories, or bases. In addition, PFS sometimes summarizes the flow of the argument (necessarily omitting essential information), rather than merely identifying the legal theories or bases that comprise the contention. Several of the Contentions cannot be divided into subcontentions because all of the evidence and

⁴ Castle Rock concedes that its ability to actively pursue, and interest in, the following contentions of the State of Utah in: (i) Contention C (dose limits); (ii) Contention F (training of personnel); (iii) Contention H (inadequate thermal design); (iv) Contention I (lack of procedure for verifying helium); (v) Contention J. (safety components, including canisters and cladding); (vi) Contention L (Geotechnical); (vii) Contention P. (inadequate control of exposure to radiation); (viii) Contention EE (Cask-Pad Stability); and (ix) Contention FF (radiation shielding).

arguments are so interrelated as to preclude outlining. Consistent with its agreement with the concept of subcontentions and objection to the form of subcontention proposed by PFS, Castle Rock hereafter restates each contention to include subcontention, to the extent appropriate, in order to focus discussion on distinct supporting bases and theories. Each subcontention, however, incorporates all relevant text of the Contention and this Reply, and the identification of subcontentions does not preclude Castle Rock from fully pursuing any argument, basis, or set of facts identified in the Contentions or this Reply.

C. Classification into Categories.

In connection with each reply below, Petitioners identify each Contention as either Safety, Environmental, Emergency Planning, or Other.

II. Legal Standards Governing the Admission of Contentions.

Pursuant to 10 C.F.R. § 2.714(b)(1), a petitioner for leave to intervene is required to file a list of the contentions it seeks to have litigated in the proceeding. As explained by the Staff and PFS, section 2.714(b)(2), as amended, requires that each contention "consist of a specific statement of the issue of law or fact to be raised or controverted," and that the following information must be provided in support of the contention:

- (i) A brief explanation of the bases of the contention.
- (ii) A concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing, together with references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion.
- (iii) Sufficient information . . . to show that a genuine dispute exists with the applicant on a material issue of law or fact. This showing must include references to the specific portions of the

application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief. On issues arising under the National Environmental Policy Act, the petitioner shall file contentions based on the applicant's environmental report.

10 C.F.R. § 2.714(b)(2).

Although 10 C.F.R. Section 2.714(b)(2) requires the petitioner to come forward with sufficient information to show that a genuine dispute exists on a material issue of law of fact, "it does not shift the ultimate burden of proof from the applicant to the Petitioner." Yankee Atomic Electric Company (Yankee Nuclear Power Station), 43 N.R.C. 235, 1996 NRC LEXIS 32, *28 (1996). As further explained in Yankee Atomic:

Nor does section 2.714 require a petitioner to prove its case at the contention stage. For factual disputes a petitioner need not proffer facts in "formal affidavit or evidentiary form" sufficient to withstand a summary judgment motion.

Id.; see also Rules of Practice for Domestic Licensing Proceedings, 54 Fed. Reg. 33,168, 33171 (1989)("The revised rule does not shift the ultimate burden of persuasion on the question of whether the permit or license should be issued; it rests with the applicant."). The intervenor's burden of alleging a factual basis for a contention is especially light in situations where the essential information is entirely in the hands of the applicant or Staff. See York Committee for a Safe Environment v. N.R.C., 527 F.2d 812, 815-16 n.12 (D.C. Cir. 1975) ("Since the information necessary . . . will be readily accessible and comprehensible to the license applicant and the Commission staff but not to petitioners, placing the burden of going forward on petitioners appears inappropriate.").

Furthermore, where the applicant has filed incomplete documents or failed to supply necessary information, it "will be sufficient for the intervenor to explain why the application is deficient." 54 Fed. Reg. 33,168, 33170 (1989); 10 C.F.R. § 2.714(b)(2)(iii)(providing that "if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons" is sufficient); Commonwealth Edison Company (Byron Nuclear Power Station, Units 1 and 2), 12 N.R.C. 683, 1980 NRC LEXIS 4, *20-21 (1980)(explaining that it is "normal to allow an intervenor to plead the inadequacy of documents or responses which have not yet been made available to the parties."). In such a case, the Licensing Board should admit the contention, "subject to later refinement and specification when the additional information has been furnished or the relevant documents have been filed." Atomic Edison, 12 N.R.C. 681, 1980 LEXIS, at *20-21.

III. Castle Rock's Replies Regarding Its Contentions.

- A. Contention 1: Absence of NRC Authority (Category: Other).** The Application is defective because NRC does not have authority to license a large-scale, off-site facility for the long-term storage of spent nuclear fuel such as the proposed PFSF, in that:
1. licensing the proposed PFSF exceeds the authority delegated to NRC by Congress;
 2. licensing the proposed PFSF is manifestly inconsistent with the express language and unambiguous purpose of the NWPA;
 3. licensing the proposed PFSF is not reasonable and consistent with the purposes of the NWPA;
 5. because the July 31, 1997 Notice of Opportunity for Hearing commencing this licensing proceeding interpreted the 10 C.F.R. Part 72 to countenance the Application, such Notice and the regulations it interprets is subject to challenge within the proceeding.

Reply:

1. Issues of Law: Castle Rock agrees with the Staff that Contentions 1, 2, 3 and 5 constitute pure issues of law and should be decided absent an evidentiary hearing. Castle Rock's 3-8 page discussion of each of these contention does not represent a complete discussion of all relevant arguments, caselaw, and administrative or legislative history; accordingly, Castle Rock requests that the Licensing Board establish a briefing schedule following the January 27-29, 1998 hearings with respect to such Contentions.

2. Contention 1 is Not an Impermissible Challenge to 10 C.F.R. Part 72. The Staff and PFS's assertion that Contention 1 is an impermissible challenge to the NRC regulations is without merit. Section 2.758(a) generally bars contentions challenging NRC regulations as part of the licensing process. See 10 C.F.R. 2.758(a). It is well established, however, that "to the extent an agency's action 'necessarily raises' the question of whether an earlier action was lawful, review of the earlier action for lawfulness" is not barred. Public Citizen v. Nuclear Regulatory Com'n, 901 F.2d 147, 152 (D.C. Cir. 1990)(quoting Environmental Defense Fund v. EPA, 852 F.2d 316, 1325 (D.C. Cir. 1988)). In Geller v. F.C.C., 610 F.2d 973 (D.C. Cir. 1979), an individual challenged rules promulgated by the Federal Communications Commission ("FCC") years after promulgation on the ground that, since the factual underpinnings for the rule--a consensus agreement designed to facilitate passage of legislation--no longer existed after the relevant legislation had passed, the rules needed to be reexamined. The FCC claimed that such a challenge was jurisdictionally barred. Id. at 977. The Geller Court first pointed out that "unlike ordinary adjudicatory orders, administrative rules and regulations are capable of continuing application; limiting the right of review of the underlying rule would effectively deny

many parties ultimately affect by a rule an opportunity to question its validity.'" Id. at 978 (citation omitted). Then, explaining that "an agency cannot sidestep a reexamination of particular regulation when abnormal circumstances make that course imperative," id. at 979, the court held that the radical change in factual circumstances justified a review of the regulations that would otherwise be barred by jurisdictional barriers. Id. at 979-981; see also Raton Gas Transmission Co. v. F.E.R.C., 852 F.2d 612 (D.C. Cir. 1988)(holding that the release announcing a sharp fee increase could be challenged outside of the normal rulemaking appeal process years after promulgation of the underlying regulations because the sharp increase created a previously non-existent challenge).

With regard to the challenge of a regulation in a context other than a rulemaking proceeding, courts have explained:

Were we to hold in this case that [petitioner's] challenge to the lawfulness of the NRC's action was untimely, [petitioner] could file a petition for rulemaking and then raise its claim of unlawfulness when the Commission denied the petition. Such a requirement would be waste of everyone's time and resources. We believe the law to be that where an agency's reiterates a rule or policy in such a way as to render the rule or policy subject to renewed challenge on any substantive grounds, a coordinate challenge that the rule or policy is contrary to law will not be held untimely

Public Citizens v. Nuclear Regulatory Com'n, 901 F.2d 147, 152-53 (D.C. Cir. 1990)(emphasis added).

In this case, the July 31, 1997 Notice of Opportunity for Hearing, 62 Fed. Reg. 41,099 (July 31, 1997) (the "Notice") created a new factual situation justifying a challenge to NRC's authority to license a private, off-site 40,000 MTU ISFSI. The Notice indicated that the Commission was considering the Application "under the provision of 10 C.F.R. Part 72. (62 Fed. Reg. 41,099). The Application is for a license to operate an independent, off-site, private

facility storing up to 40,000 MTU of spent nuclear fuel. (Emergency Plan 1.1). Thus, by means of the Notice, the NRC for the first time notified the public that--despite the absence of specific authorization in the AEA and numerous provisions in the NWPA outlining a contrary Congressional intent--NRC was interpreting the provisions of 10 C.F.R. Part 72 to countenance an application for a private, off-site 40,000 MTU storage facility. Like the agencies' actions in Raton and Geller, the NRC's action in publishing the Notice created a novel interpretation and factual situation, that did not previously exist, and thus was not subject to prior challenge. The first opportunity Castle Rock has had to challenge the Notice's interpretation of "ISFSI" and 10 C.F.R. Part 72 before NRC is by means of this licensing proceeding. In order to avoid the "waste of everyone's time and resources" that would be involved in a rule making proceeding or section 2.758(b) petition for waiver, the Licensing Board should consider the issues raised by the Notice as part of this proceeding. Alternatively, the Licensing Board should certify Contentions 1 to the Commission pursuant to 10 C.F.R. § 2.718.⁵

3. NRC Does Not Have Authority to License the an Private, Off-Site, 40,000 MTU ISFSI. Whether or not the AEA could at one time have been interpreted to permit NRC to license a private, off-site, 40,000 MTU spent fuel storage facility under tangentially related provisions in the AEA, Congress's clear expression of its contrary intent in the comprehensive

⁵ Certification to the Commission under section 2.718(i) is appropriate if the question "affects the basic structure of the proceeding in a pervasive or unusual manner" or "threatens the party adversely affected by it with immediate and serious irreparable impact." 10 C.F.R. 2.786(g)(2). Castle Rock is challenging the NRC's authority to license the PFSF as an ISFSI, or even to conduct this proceeding under 10 C.F.R. Part 72 (rather than regulations governing permanent repositories). Such a question clearly affects the structure of the proceeding in a pervasive manner and, if not answered early in the proceeding, affects all parties expending substantial resources on this proceeding with significant, irreparable harm.

scheme for the storage of spent nuclear fuel set out in the NWPA made it clear that such authority does not presently exist. The statutory basis for the regulations purportedly authorizing NRC to license the PFSF is Section 53(a) of the AEA, which authorizes NRC to "issue licenses to transfer . . . possess, own, receive possession or title to . . . spent nuclear material." 42 U.S.C. § 2071. Neither Section 53(a), nor any other statutes cited by the Staff or PFS, expressly authorize NRC to license the storage of spent nuclear fuel. Moreover, no such statutory provisions purport to enumerate federal policy regarding storage of spent nuclear fuel, discuss limitations on NRC's or DOE's ability to store or license storage of spent nuclear fuel, or direct NRC or DOE to take action with respect to storage of spent nuclear fuel. That is because the AEA is not the means by which Congress expressed its will and intent with regard to storage of spent nuclear fuel. In fact, when the AEA was passed in the 1950s, Congress and the nuclear energy industry anticipated that spent nuclear fuel would be reprocessed. See House Report No. 97-491 (1982), reprinted in 1982 U.S.C.C.A.N 3792, 3793-94.

In stark contrast to the silence of the AEA regarding storage or disposal of spent nuclear fuel, the NWPA expressly provides that its purposes include "establish[ing] the Federal responsibility, and a definite Federal policy, for the disposal of such waste and spent fuel" 42 U.S.C. §10131(b)(emphasis added). The "definite federal policy" regarding disposal of spent nuclear fuel includes, without limitation (1) construction by DOE of a permanent repository capable of storing up to 70,000 MTU of spent nuclear fuel; 42 U.S.C. 10131 et seq., (2) consolidated interim storage in a DOE-operated 15,000 MTU monitored retrievable storage facility; 42 U.S.C. § 10161 et seq, and (3) dispersed interim storage through the effective use

of available or additional storage capacity on the site of nuclear power reactors and through DOE-sponsored off-site storage programs. 42 U.S.C. 10151 et seq.

Moreover, contrary to the Staff's assertion that the NWPA "does not address . . . away-from-reactor ISFSIs," the NWPA expressly provides that "nothing in this chapter⁶ shall be construed to . . . authorize the private use . . . of any storage facility located away from the site of any civilian nuclear power reactor and not owned by the Federal Government." 42 U.S.C. § 10155(h). The Staff correctly notes that the interim storage section of the NWPA does not list private, off-site storage among the numerous storage options it articulates. See Staff Response, at 10-11; 42 U.S.C. § 101559(a). That is precisely Castle Rock's point. The NWPA is Congress's comprehensive and exclusive program for the storage of spent nuclear fuel. As part of this comprehensive program, numerous provisions facilitate and emphasize the importance of efficient on-site storage; other provisions provide for a DOE-sponsored 15,000 MTU monitored retrievable storage facility and 1,900 MTU of DOE-sponsored off-site or cooperative storage. This comprehensive solution to the nation's nuclear waste storage problem does not include private, off-site storage. Rather, as made clear by the only reference to facilities "located away from the site of any civilian nuclear power reactor and not owned by the Federal Government" is that "nothing in this chapter is shall be construed to . . . authorize" them⁷. See also 42 U.S.C. 10163(B)(2)(requiring the MRS Commission to compare the need

⁶ The use of the word "chapter" as opposed to "part" or "section", as used in other provision of the NWPA, makes it clear that the limitations of 42 U.S.C. § 10155(h) apply to the entire NWPA.

⁷ PFS appears to argue that 42 U.S.C. § 10155(h) does not exist, presumably because NRC rescinded related regulations. PFS's fervent hoping to the contrary, an agency does not repeal statutory provisions restricting its authority by failing to comply with them and then rescinding

for an MRS to "the alternative of at-reactor storage of spent nuclear fuel prior to disposal of such fuel in a repository," but not mentioning away-from-reactor storage as an alternative).

An agency "cannot rely on its general authority . . . when a specific statutory directive defines the relevant function of [the agency] in a particular area." American Petroleum Institute v. EPA, 52 F.3d 691, 694 (D.C. Cir. 1997). Accordingly, NRC may not rely on the AEA to license an private, off-site ISFSI when the statute defining its function relative to storage of spent nuclear fuel—the NWPA—denies its such authority. See Western National Mutual Insurance Company v. Commissioner, 65 F.3d 90, 94 (8th Cir. 1995)(a regulation may not be sustained "when that regulation is fundamentally at odds with the manifest congressional design"); Webb v. Hodel, 878 F.2d 1252, 1255 (10th Cir. 1989) (regulations are "entitled to no deference if they are inconsistent with congressional intent" or "if there are compelling indications that the regulations are wrong").

Furthermore, the Staff and PFS completely ignore Congress's desire to ensure that a large capacity, centralized storage facility would be constructed only if strict safety, environmental and political prerequisites were satisfied. In the NWPA, Congress restricted DOE to providing "not more than 1,900 metric tons of capacity" through the various DOE-sponsored or cooperative methods outlined in 42 U.S.C. § 10155. The monitored retrievable storage facility authorized by Part C of the NWPA was to hold not more than 15,000 MTU of spent nuclear fuel, 42 U.S.C. § 10168(d)(4). Even with that comparatively small capacity, Congress made sure that such a facility could not be constructed absent, among other things (1) express

related regulations. Congress has not passed any law repealing or superseding section 10155(h), so it remains the law.

Congressional approval; (42 U.S.C. § 10161(c)(2)), (2) mitigation payments to affected local government units; (42 U.S.C. §§ 10161(f)(2), 10167); (3) state and Indian tribe participation, including the right to disapprove, subject only to Congressional veto (42 U.S.C. §§ 10166(a), 10161(h)), and (4) appointment of a commission to evaluate the need for and effects of such a large centralized facility. (42 U.S.C. § 10163). Even the proposed permanent repository authorized in Part A -- the construction and licensing of which is subject to numerous approvals outlined in Castle Rock's Contention 1 -- may not exceed 70,000 MTU of capacity. (42 U.S.C. § 10134(d)). Thus, even if it could be argued that Congress did not bar private, off-site ISFSIs per se when it passed the NWPA, Congress certainly did not place the extensive political, safety, and environmental restrictions on the 15,000 MTU monitored retrievable storage facility and yet somehow give NRC permission to license a private 40,000 MTU facility--almost 3 times the size of the MRS--without any such restrictions or prerequisites.

The Staff's reliance on the Ninth Circuit Court of Appeal's decision in State of Idaho v. U.S. Dep't of Energy, 1991 U.S. App. LEXIS 29421 (December 13, 1991) is misplaced. In State of Idaho, DOE had entered into a contract in 1965, amended in 1989, under which a private entity agreed to construct an experimental nuclear plant. DOE, in turn, agreed to purchase spent nuclear fuel from the experimental plant upon its delivery to a storage facility located in Idaho. In 1989, the experimental plant closed down and, over the objections of the governor of Idaho, the DOE agreed to receive the spent fuel. The State of Idaho and intervening Indian tribes argued that the NWPA, especially its transportation requirements, prevented DOE from transporting such spent fuel to Idaho. Holding for DOE, the court determined that "[r]ead in light of the statute's historical context and the accompanying legislative history, . . . [the

NWPA] does not apply to storage agreements in existence before its enactment." Id. at *9 (emphasis added). This was, in part, because the purchase and receipt of spent fuel by DOE from that specific experimental plant had been expressly authorized in Public Law 89-32, at p. 122 (June 2, 1965). Id. at *12. Unlike State of Idaho, this case does not involve the question of whether the NWPA prohibits the federal government from fulfilling its obligations under a contract entered into 17 years before the enactment of the NWPA and entered into pursuant to Congress's express authorization. Moreover, the NWPA contemplates use of off-site storage facilities "owned by the Federal Government on January 3, 1983," like the facility in State of Idaho, 42 U.S.C. § 10155(h). The NWPA does not in any manner contemplate--and in fact provides that it "nothing . . . shall be construed to . . . authorize"--a private, off-site storage facility.

The Staff's discussion of the history and context of the NWPA is similarly unpersuasive. First, the Staff relies extensively on statement of NRC's own Director of Operations and a single representative. "The remarks of a single legislator, even the sponsor, are not controlling in analyzing legislative history." Chrysler corp. v. Brown, 441 U.S. 281, 311 (1979); see also Weinberger v. Rossi, 456 U.S. 25, 35 (1982)("One isolated remark by a single [congressman] . . . is insufficient to establish the kind of affirmative congressional expression necessary to evidence an intent . . ."). To the extent the remarks of legislators or witnesses at committee meetings are relevant, the remarks relevant to the bills leading up to the NWPA reveal only that the question private, off-site storage was hotly contested. See, e.g., Statement of U.S. Rep. Butler Derrick Before the Subcommittee on Energy and the Environment Committee on Interior and Insular Affairs, 97th Cong., 1st Sess., on H.R. 1993, H.R. 2800, H.R. 2840, H.R. 2888,

H.R. 3809 (1981) 315, 318 ("with regard to interim storage at spent nuclear fuel in away from reactor (AFR) storage pool, I remained opposed . . ."); Testimony of David Berrick, Environmental Policy Center, *id.*, 334, 337 (acknowledging a hot dispute about away from reactor storage).

Even were the Staff quoting from reports approved by a whole committee--rather than the comments of one legislator and NRC's own representative--such quotes would shed little light on Congressional intent. As explained by the Ninth Circuit Court of Appeals:

The legislative history suffers from the usual infirmity, that it was not passed by both houses of Congress and signed into law by the President. For that reason, it is not the law. The staff person who wrote the House committee's legislative history might have represented accurately what all the House committee members meant to say in the bill but did not Alternatively, the staff person might have been assigned to write what some committee members wanted in the bill but did not get, or to throw a bone to some pro-privacy lobbying whose preferred language was rejected by the House committee Legislative history need not be written with the same care, or scrutinized by those skeptical of the statute with the same care as statutory language. There is no way for a House or Senate member outside the relevant committee to vote against legislative history.

Puerta v. United States, 121 F.3d 1338, 1344 (9th Cir. 1997). In this case, the statute setting forth Congress's comprehensive, "definite federal policy" regarding storage of spent nuclear fuel expressly provides that "nothing in this chapter is shall be construed to . . . authorize" any but federally-sponsored or on-site storage of spent nuclear fuel; accordingly, a few isolated comments from advocates of the non-prevailing position can hardly be considered evidence of congressional intent.

Castle Rock's argument that Congress intended to withhold authority from NRC to authorize private, off-site storage in the NWPA is strengthened, not weakened, by the amendment history recited by the Staff. The Staff explains that :

Earlier versions of the bill had, in fact, required reactor operators and owners seeking to enter into storage contracts with DOE to first pursue options for non-federal storage away from the site of a nuclear reactor. . . . [cite] (utilities would be permitted to enter into contracts with DOE if they are pursuing license alternatives, including the "purchase, lease, or other acquisition of any non-Federal storage facility located away from the site of any nuclear power reactor."). The final bill however, did not contain such language.

Staff Response, at 12. As the Ninth Circuit's discussion in Puerta suggested was possible, the view represented by the Staff's legislative history is the viewpoint not enacted into law. Certain groups wanted the NWPA to authorize and require utilities to pursue private, off-site storage alternatives. As enacted into law by the entirety of Congress and the President, however, the NWPA contained the exact opposite language--i.e. "nothing in this chapter is shall be construed to . . . authorize" private, off-site storage. Consistent with such language, and the overall intent of the NWPA, NRC does not have authority to authorize a private, off-site 40,000 MTU storage facility.

- B. **Contention 2: Non-Compliance with Regulations (Category - Safety, Environmental, Emergence Planning, Other)**. PFS's Application is defective because it seeks a license for an ISFSI pursuant to 10 C.F.R. Part 72. However, the proposed storage installation is not an ISFSI and is otherwise not licensable under 10 C.F.R. Part 72 because:
1. In order to harmonize NRC regulations with the NWPA and AEA, the regulation defining ISFSI must be interpreted to exclude the proposed PFSF;
 2. NRC regulations must be construed to require PFS to demonstrate maximization of the use of existing storage capability at reactor sites;
 3. NRC regulations must be construed to require PFS to demonstrate that DOE has exhausted all means for providing off-site storage capacity;
 4. [Castle Rock withdraws its Fourth Basis for Contention 2].

Reply.

1. The First Basis is Not a Challenge to 10 C.F.R. Part 72: Contrary to the assumption of the Staff and PFS, Castle Rock is not attacking the regulations authorizing ISFSIs; rather, Castle Rock seeks a determination that the PFSF is not an ISFSI. ISFSI is defined to mean "a complex designed and constructed for the interim storage of spent nuclear fuel and other radioactive materials associated with spent fuel storage." 10 C.F.R. § 72.3. This definition neither specifically includes nor excludes private, off-site 40,000 MTU facilities. As discussed in Contention 1, however, NRC does not have the authority to license a private, off-site 40,000 MTU storage facility. A regulation may not be sustained "when that regulation is fundamentally at odds with the manifest congressional design." Western National Mutual Insurance Company v. Commissioner, 65 F.3d 90, 94 (8th Cir. 1995). Moreover, a "regulation must be interpreted so as to harmonize with and further and not to conflict with the objective of the statute it implements." Emery Mining Corp. v. Secretary of Labor, 744 F.2d 1411, 1414 (10th Cir. 1984)(citation omitted).⁸ Because the definition of ISFSI provided in the regulation does not by its terms include or exclude a private, off-site 40,000 MTU facility, Castle Rock's request for a determination that the definition of ISFSI excludes the PFSF is not an attack on the

⁸ Both the Staff and PFS try to argue that Emery Mining does not apply because, they assert, 10 C.F.R. Part 72 implements the AEA, not the NWPA. Their assertion--that NRC can interpret a regulation so as to clearly conflict with the NWPA, as long as such interpretation is consistent with the statute the regulation purportedly implements--is preposterous. A regulation must be consistent with congressional intent, as expressed in all governing and relevant statutes. See Webb v. Hodel, 878 F.2d 1252, 1255 (10th Cir. 1989) (regulations are "entitled to no deference if they are inconsistent with congressional intent" or "if there are compelling indications that the regulations are wrong"). In Addition, it is worth noting that the "authority notes applicable to all of 10 C.F.R. Part 72." (i.e. including section 72.3) cites not only sections of the AEA, but also 42 U.S.C. §§ 10151, 10152, 10153, 10155, 10157, 10162, 10168, 10162(b), 10168(c), and 10154--all of which are sections are part of the NWPA.

regulation; it is merely a request that, in selecting among alternative interpretations of ISFSI, the Licensing Board select the definition that is compatible with the NWPA.

2. The Second and Third Bases Are Not a Challenge to 10 C.F.R. Part 72:

Castle Rock does not attack 10 C.F.R. Part 72 in its second and third bases. Castle Rock merely argues that the Application is deficient because, in addition to the aspects in which it fails to comply with 10 C.F.R. Part 72, the Application does not comply with certain requirements of the NWPA--specifically that an applicant demonstrate exhaustion of storage capacity at each current on-site storage facility and exhaustion of DOE's obligations to provide 1,900 MTU of storage capacity for facilities lacking space. Because such Contentions merely seek to have the regulations construed to reflect statutory requirements, any arguments deeming them to be impermissible attacks on the regulations or structure of the proceedings are without merit.

3. Incorporation of Permissible Challenge Argument. To the extent any parts of Contention 2 are interpreted to be attacks on the regulations or structure of these proceedings, Castle Rock incorporates herein its Reply #2 to Contention 1, regarding the permissibility of a challenge to the regulations in this proceeding and the importance of the Licensing Board reviewing such challenges on the merits or certifying them to the Commission.

C. Contention 3: Conflict with DOE Duties and Prerogatives (Category - Safety, Environmental, Emergence Planning, Other). The Application must be denied because the proposed PFSF interferes with DOE duties and prerogatives under the NWPA:

1. to encourage and expedite the effective use of available storage, and additional storage, at the site of each civilian nuclear power reactor by, among other means, encouraging optimization of existing capacity, cooperating in the development of new technology, and ensuring that spent fuel is not removed from the site of power plants with adequate storage capacity;

2. to provide not more than 1,900 MTU of capacity for the storage of spent nuclear fuel if on-site storage space is inadequate;
3. to complete a detailed study of the need for and feasibility of, and submit to Congress a proposal for, the construction of one or more monitored retrievable storage facilities for high-level radioactive wastage and spent nuclear fuel; and
4. beginning not later than January 31, 1998, to dispose of the high-level radioactive waste or spent nuclear fuel subject to certain statutorily required contracts in a safe, permanent repository.

Reply:

As outlined in Castle Rock's reply to Contention 2, which legal arguments are incorporated herein by reference, Castle Rock does not attack 10 C.F.R. Part 72 or the licensing process. Castle Rock merely argues that the Application is deficient because, in addition to the aspects in which it fails to comply with 10 C.F.R. Part 72, it conflicts with enumerated statutory duties and prerogatives of DOE. Because Contention 3 merely seeks to have the regulations construed to reflect, or not conflict with, all statutory requirements, the Staff's and PFS's arguments that Contention 3 should be rejected as an attack on the regulations or structure of the proceedings are without merit.

To the extent any parts of Contention 3 are interpreted to be attacks on the regulations or structure of these proceedings, Castle Rock incorporates herein its Reply #2 to Contention 1, regarding the permissibility of a challenge to the regulations in this proceeding and the importance of the Licensing Board reviewing such challenges on the merits or certifying them to the Commission.

- D. **Contention 4: Attempts to Evade the Requirements of the NWPA (Category - Other)**. The status of the Application suggests that DOE has either tacitly or

directly agreed with PFS and its member utilities to allow the Application to proceed in an attempt to evade the statutory mandates of the NWPA.⁹

The Staff's and PFS's claim that Castle Rock has not submitted sufficient evidence in support of Contention 4 is without merit. Castle Rock described DOE's numerous responsibilities--including without limitation the provision of 1,900 MTU of additional storage capacity, the proposal of a 15,000 MTU monitored retrievable storage facility, the assumption of ownership of spent nuclear fuel subject to certain contracts, and the evaluation and construction of a permanent repository--each of which DOE has failed, or will fail, to timely execute. The proposed PFSF encroaches on the DOE's jurisdiction with respect to spent fuel subject to such obligations, yet DOE has not intervened in these licensing proceedings to prevent PFS from expropriating such responsibilities. The proposed PFSF could also divert attention from the negative impacts of DOE's failure to execute many of its duties under the NWPA. An improper agreement can be inferred from such circumstantial evidence. See United States v. Wood, 879 F.2d 927, 938 (D.C. Cir. 1989); United States v. Treadwell, 760 F.2d 327, 333 (D.C. Cir. 1985) (same).

PFS's alleged participation in the lawsuit against DOE only strengthens Castle Rock's evidence. PFS explains in its response that the absence of any improper agreement with the DOE can be inferred from the fact that "most of the utilities who have formed and owned PFS" have filed suit against DOE and are insistent that DOE enforce its obligations. (PFS Response, at 343). Of Course, the Application contains no information about the identities of the members

⁹ This Contention is not appropriate for division into subcontentions because all arguments, facts, citations, descriptions, etc. evidence support the same basis--i.e. an apparent improper agreement between DOE and PFS.

of PFS, so Castle Rock is unable to verify their participation in the lawsuit. But, assuming the constituent entities of PFS are participants in the lawsuit against DOE, their status as plaintiffs demanding that DOE begin receiving waste as soon as possible creates incentive for DOE to support--despite its statutory obligations--any means of security space for the storage of spent nuclear fuel. Castle Rock has met its evidentiary burden and Contention 4 should be admitted.

To the extent any parts of Contention 4 are interpreted to be attacks on the regulations or structure of these proceedings, Castle Rock incorporates herein its Reply #2 to Contention 1, regarding the permissibility a challenge to the regulations in this proceedings, and the importance of the Licensing Board reviewing the challenge on the merits or certifying it to the Commission.

E. **Contention 5: Application For Permanent Repository (Category -- Safety, Environmental, Emergence Planning, Other)**. The proposed PFSF is properly characterized as a de facto permanent repository, and the Application fails to comply with the licensing requirements for a permanent repository in that:

1. no repository or other storage facilities capable of absorbing the 40,000 MTU of spent fuel to be stored at the PFSF exist, or likely will exist at the time PFS proposed to decommission the PFSF; the PFSF will function as a de facto permanent repository and must be licensed as such; the Application is defective because it does not meet the requirements of a permanent repository.
2. even if a permanent repository is operational at the time the PFSF is proposed to be decommissioned, such repository will not be able to absorb 40,000 MTU at once or at a rate that will permit decommissioning of the PFSF; the PFSF will function as a de facto permanent repository and must be licensed as such; the Application is defective because it does not meet the requirements of a permanent repository.

Reply:

1. **Contention 5 Does Not Challenge 10 C.F.R. Part 72.**

Contrary to the Staff's argument, Contention 5 does not challenge the NRC's right to license ISFSIs or the specific requirements of 10 C.F.R. Part 72. Rather, Contention 5 challenges the Application's assertion that the proposed PFSF is an ISFSI which can be licensed under 10 C.F.R. Part 72. Castle Rock describes facts in Contention 5 evidencing that, if constructed, the PFSF will store spent nuclear fuel indefinitely into the future. Because ISFSI is defined to mean a complex "for the interim storage of spent nuclear fuel," (10 C.F.R. § 72.3), the PFSF will not, as the Application asserts, be an "ISFSI." Rather, it will be a permanent storage facility, and as such, must meet the requirements for a permanent geological repository identified in Part A of the NWSA and in relevant regulations. The Application and PFSF do not meet the requirements for a permanent repository, and therefore, the Application must be rejected.

2. Contention 5 is Not an Impermissible Challenge to the Waste Confidence Decision.

Contrary to the Staff's and PFS's arguments, Contention 5 does not impermissibly challenge NRC's determinations in 10 C.F.R. § 51.23 or the so-called Waste Confidence decision¹⁰ (collectively the "Waste Confidence Decision"). (See Review and Final Revision of

¹⁰ The substance of the Waste Confidence Decision has been incorporated into 10 C.F.R. § 51.23, which provides:

The Commission has made a generic determination that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the license for operation of that reactor at its spent fuel storage basin or at either onsite or offsite independent spent fuel storage installations. Further, the Commission believes there is reasonable assurance that at least one mined geologic repository will be available within the first quarter of the twenty-first century, and sufficient repository capacity will be available within 30 years beyond the licensed life for operation of any reactor to dispose of the commercial high-level radioactive waste and spent fuel originating in reactors and generated up to that time.

Waste Confidence Decision, 55 Fed. Reg. 38,474 (September 18, 1990)(the "1990 Release)).

First, Contention 5 does not challenge the determination "that at least one mined geologic repository will be available within the first quarter of the twenty-first century." (the "Repository Determination") (See 10 C.F.R. § 51.23(a)). In Contention 5, Castle Rock points out that "even if a permanent repository were constructed . . . it may not be able to absorb the full 40,000 MTU proposed to be stored at the PFSF." Consistent with such determination, it is estimated that the proposed permanent repository will be operational in year 2015, or as late as 2023. GAO/T-RCED-93-58, Yucca Mountain Project Management and Funding Issues, statement of Jim Wells (1993). A queue has been established for the first ten years of repository operation, see DOE/RW-1457, Department of Energy Annual Capacity Report (OCRWM: March 1995), attached hereto as Exhibit 1. Once the repository is up and running, it is expected to receive additional spent fuel at the pace of only 900 MTU per year. Id. at 4. Thus, even assuming that the permanent repository were constructed in 2015 and received only fuel from the PFSF, it would be year 2059 (44 years at 900 MTU) before the repository could receive all of the fuel stored at the proposed PFSF. If we factor in the existence of a queue for the first ten years of operation and the likelihood that fuel from numerous sources will compete for the repository's limited to 70,000 MTU of capacity, it becomes clear that the proposed PFSF will of necessity

Accordingly,. . . within the scope of the generic determination in paragraph (a) of this section no discussion of any environmental impact of spent fuel storage . . . in independent spent fuel storage installations (ISFSI) for the period following the term of the . . . initial ISFSI license or amendment for which application is made, is required in any environmental report, environmental impact statement, environmental assessment or other analysis prepared . . . in connection with the issuance of an initial license for storage of spent fuel at an ISFSI, or any amendment thereto.

10 C.F.R. §51.23

continue storing spent nuclear fuel well beyond a 20, or even a 40 year licensing term-- indefinitely into the future. Accordingly, even if the Depository Determination remains unchallenged, the PFSF will of necessity store spent nuclear fuel indefinitely into the future, and therefore, must be licensed under regulations and statutes governing permanent repositories.

3. The Depository Determination Must Be Questioned in this Proceeding.

The Depository Determination must, and may, be questioned as part of the licensing proceeding. The Commission has stated its intent to review the Waste Confidence Decision whenever significant or unexpected events occur. As explained in NRC's Review and Final Revision of Waste Confidence Decision, 55 Fed. Reg. 38474 (September 18, 1990):

This would not, however, disturb the Commission's original commitment to review its Decision whenever significant and pertinent unexpected events occur. The Commission anticipates that such events as a major shift in national policy, a major unexpected institutional development, and/or new technical information might cause the Commission to consider reevaluating its Waste Confidence Findings

Although 10 C.F.R. Section 2.758(a) generally bars contentions challenging NRC regulations or generic determinations as part of the licensing process, a combination of numerous events-- including NRC's issuance of the Notice, unexpected discoveries in site characterization activities at Yucca Mountain, and a shift in national policy--require consideration of the Depository Determination as part of this proceeding.

As discussed in Castle Rock's reply #2 with respect to Contention 1, which argument is incorporated herein by reference, "to the extent an agency's action 'necessarily raises' the question of whether an earlier action was lawful, review of the earlier action for lawfulness is not time-barred." Public Citizen v. Nuclear Regulatory Com'n, 901 F.2d 147, 152 (D.C. Cir. 1990)(quoting Environmental Defense Fund v. EPA, 852 F.2d 316, 1325 (D.C. Cir. 1988).

Moreover, when certain facts have rendered a generic determination subject to new challenge, forcing a petitioner to challenge the lawfulness of a rule through a separate proceeding--when an appropriate forum is at hand--" would be waste of everyone's time and resources." Public Citizens, 901 F.2d at 152-53 (D.C. Cir. 1990).

Numerous unexpected and significant events have happened since 1990 that merit re-review of the Depository Determination. At this time, the only site DOE can legally consider for a permanent repository is Yucca Mountain. See 42 U.S.C. § 10133. In 1992, a 5.6 magnitude earthquake 8 miles from Yucca Mountain site affected the site enough to cause \$1 million worth of damages at the DOE field office, raising serious questions about the geologic stability of the site. See Earl Lane, The Leftovers of a Nuclear Age, Newsday, August 4, 1997, at A07, a copy of which is attached hereto as Exhibit 2. In addition, recent discoveries of water inside Yucca Mountain contaminated from atomic testing demonstrate that water will penetrate into the repository much faster than expected. Earl Lane, The Leftovers of a Nuclear Age, Newsday, August 3, 1997, at A04, a copy of which is attached hereto as Exhibit 3; see also Keith Rogers, Plutonium Found In Water, Las Vegas Review-Journal, September 11, 1997, at 1A. In addition, the Nuclear Waste Policy Act of 1997 (the "1997 NWPA"), Senate Bill 107, which passed the Senate by a wide margin and is expected to do the same in the House, authorizes construction of a large, government sponsored, centralized storage facility by 2003. See 105th Cong., 1st Sess. S. Bill 104, Version 4, Section 205, excerpts of which are attached hereto as Exhibit 4; 1997 LEXIS, Bill Tracking S. 104, attached hereto as Exhibit 5; Earl Lane, The Leftovers of a Nuclear Age, Newsday, August 3, 1997, at A04. This facility will certainly displace the funding and perceived need for a permanent geological repository. In addition, the

governor of Nevada, who has a right to veto the proposed repository, has publicly announced his opposition to a permanent repository in the State of Nevada. See 42 U.S.C. 10135(c); Kenneth J. Garcia et al., Fighting for Lethal Leftovers, San Francisco Chronicle, April 13, 1995, at A1. Furthermore, DOE has repeatedly failed to meet mandatory deadlines with respect to the storage of spent nuclear fuel, and is about to fail to fulfill its statutory obligation to take possession of spent nuclear fuel subject to NWPAs-mandated contracts. See 42 U.S.C. § 10222(a)(5)(B); Northern States Power Co. v. Dep't of Energy, 1997 WL 705072 (D.C. Cir.) (November 14, 1997). In fact, in Northern States Power Co., DOE admitted that it was "uncertain" as to when it could begin spent fuel acceptance. Id. at *3.

In light of the significant and unexpected events casting doubt on the Depository Determination since the affirmation of the Waste Confidence Decision in 1990, NRC must fulfill its commitment to reconsider the decision. The PFSF will be a de facto permanent repository and must be recognized and licensed as such. In order to avoid unnecessary parallel proceedings, the Licensing Board should re-consider the Depository Determination as part of this proceeding and, after determining that the PFSF is a de facto permanent repository, require that it comply with the relevant requirements. Alternatively, the Licensing Board should certify Contention 5 to the Commission pursuant to 10 C.F.R. § 2.718.

4. The Impact Analysis Limitations Must Also Be Reviewed in this Proceeding.

The limitations on impact analysis in 10 C.F.R. § 51.23(b) must be reviewed or waived for this proceeding. Section 51.23(b) provides, in relevant part:

Accordingly, . . . within the scope of the generic determination in paragraph (a) of this section no discussion of any environmental impact of spent fuel storage . . . in

independent spent fuel storage installations (ISFSI) for the period following the term of the . . . initial ISFSI license or amendment for which application is made, is required in any environmental report, environmental impact statement, environmental assessment or other analysis prepared . . . in connection with the issuance of an initial license for storage of spent fuel at an ISFSI, or any amendment thereto.

10 C.F.R. § 51.23(b) (the "Impact Analysis Restrictions").

As discussed above, it is estimated that the proposed permanent repository, if constructed, will be operational in year 2015, or as late as 2023. GAO/T-RCED-93-58, Yucca Mountain Project Management and Funding Issues, statement of Jim Wells (1993). A queue has been established for the first ten years of repository operation. See DOE/RW-1457, Department of Energy Annual Capacity Report (OCRWM: March 1995) ("Capacity Report"), attached hereto as Exhibit 1. Once the repository is operating, it is projected to receive no more than 900 MTU of spent nuclear fuel per year. Capacity Report, at 4. Thus, even assuming that the permanent repository were constructed in 2015 and received only fuel from the PFSF, it would be year 2059 (44 years at 900 MTU) before the repository could receive all of the fuel stored at the proposed PFSF. If one factors in the existence of a queue for the first ten years and the likelihood that fuel from numerous sources will compete for the repository's 70,000 MTU of capacity, it becomes clear that the repository will not be able to absorb all of the fuel stored at the proposed PFSF until at least the last quarter of the twenty-first century--if at all.

This inability of the repository to timely absorb all spent fuel at the PFS will, among other things, increase decommissioning costs and create an extended (and possibly heightened) impact on the environment. Moreover, continued operation of the PFSF well beyond the planned date of decommission will have significant safety ramifications. PFS's proposed budget, service contracts (to the extent discernible from PFS's brief summary), and decommissioning

plan do not provide funds for a super-extended operating or decommissioning period. A shortfall of funds could lead to shortcuts and related safety problems. (See Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), 30 N.R.C. 121, 1989 NRC LEXIS 39 *29-30 (1989) (acknowledging a nexus between financing shortages and safety problems). Also, the possibility of human error, cask degradation, and external events affecting the PFSF increase as decommissioning is delayed.

Facts demonstrating that the PFSF cannot dispose of the spent fuel it is storing and complete decommissioning until at least 2059, probably much later, require a review and waiver of the Impact Analysis Restrictions in this proceeding. Even if it is assumed that a permanent repository will be timely constructed, the above-described facts conclusively negate any generic assumption that PFS will be able to remove all fuel from the facility and decommission it at the end of an initial, or even a second, twenty year licensing period. The possibility of an application for a 40,000 MTU private storage facility was not considered by the Commission when it issued the Impact Analysis Restrictions and raises serious safety concerns. Accordingly, the Impact Analysis Restrictions should be reviewed or waived in this proceeding, to the extent either permits PFS to limit its environmental impact analysis to fewer than seventy-five years, permits PFS to assume that decommissioning will occur before year 2075, or permits PFS to assume that all fuel stored in the proposed PFSF will timely be received by a permanent repository.

- F. **Contention 6: Emergency Planning and Safety Analysis Deficiencies (Category - Emergency and Safety)**. The Application does not provide for reasonable assurance that the public health and safety will be adequately protected in the event of an emergency affecting the PFSF, in that:

1. the EP and SAR fail to consider the effect of fires or similar events in the Skull Valley that could force evacuation of the PFSF or cause degradation of fuel cladding, canisters, and storage cask concrete;
2. the EP and SAR fail to address the availability of water to defend the PFSF from such a fire, measures for ensuring groundwater is not contaminated by run-off, and the possible need to quarantine the PFSF;
3. the EP and SAR fail to consider the effects of an emergency at a nearby facility requiring extended evacuation of the PFSF, compromising the safety of PFSF personnel or compromising the PFSF's proposed security and emergency response measures; and
4. the EP and SAR fail to consider the effect of the 2002 Winter Olympic Games in Salt Lake City.

Reply:

1. Fires and Toxic Releases. The EP and SAR fail to consider the effect of a fire or series of fires in the Skull Valley requiring an extended evacuation of the PFSF. In Contention 6, Castle Rock submits evidence of a history of numerous fires in the area surrounding the proposed PFSF, including a fire of such duration that some residents on the Goshute Reservation and a nearby town had to be evacuated. See Photographic excerpt from the Utah Statewide Fire Assessment Fire History (1986-1996), attached to the Contentions as Exhibit A; ER Figure 2.2-2; Larry D. Hatfield, Wildfires Dances Across Sierra Lightning, San Francisco Examiner, July 9, 1996, at A2, a copy of which is attached hereto as Exhibit 6; Fires Gain Upper Hand on Lightning-Sparked Blazes in Utah, Las Vegas Review-Journal, July 11, 1996, at 5B, a copy of which is attached hereto as Exhibit 7. In addition, leaders of the Skull Valley Band of Goshute Indians have claimed that the 1968 release of nerve gas from the Tooele Army Depot that killed over 6,000 sheep (owned by Castle Rock's predecessors) also affected, and even killed, residents of the Goshute Reservation. See Jim Woolf, Nerve Agent Near Dead

Utah Sheep in '68, Salt Lake Tribune, January 1, 1998, at A1, a copy of which is attached hereto as Exhibit 8. Contrary to the implications of PFS's arguments, the regulations do not require analysis of potential emergency situations only if intervenors can prove that the identical events happened in the past---which ironically is the case here. Rather, the Application must examine activities that "might endanger the proposed ISFSI" or "could affect the safe operation of the ISFSI." See 10 CFR §§ 72.90 & 72.94. Castle Rock has introduced evidence that fires and a release of nerve gas have affected the region in which the proposed PFSF will be located and described the probable effects of such events--including the need for an evacuation, possible degradation as a result of smoke and heat, a shortage of water, or contamination as a result of fire fighting efforts.

Although the Application does address fires, it does not acknowledge the probability of an extended brush fire and unrealistically assumes that any fire would be extinguished in 15-30 minutes. See EP at 2-12 to 16; SAR § 8.2.5. Brush fires and releases of toxic agents are credible accident scenarios, and the Applications fails to adequately deal with the likely consequences of such events. See 54 Fed. Reg. 33,168, 33170 (1989) (where an applicant has filed incomplete documents or failed to supply necessary information, it "will be sufficient for the intervenor to explain why the application is deficient"). Accordingly, the Application is defective, and Contention 6 should be admitted.

2. An Emergency at a Nearby Facility. The EP and SAR fail to consider the effect of an emergency at a nearby facility requiring extended evacuation of the PFSF, compromising the safety of PFSF personnel, or compromising the PFSF's proposed security and emergency response measures. While the Application cursorily mentions land uses within a five

mile radius of the proposed ISFSI (ER § 2.2.2, SAR §§ 2.1.4 & 2.2), it fails to adequately address the requirements of NUREG-1567, which states:

The locations of nearby nuclear, industrial, transportation, and military installations should be indicated on a map which clearly shows their distance and relationship to the ISFSI. All facilities within an 8-km (5-mi) radius should be included, as well as facilities at greater distances, as appropriate to their significance. For each facility, a description of the products or materials produced, stored or transported should be provided, along with a discussion of potential hazards to the ISFSI from activities or materials at the facilities.

NUREG-1567, *Standard Review Plan for Spent Fuel Dry Storage Facilities (Draft)*, § 2.4.2, U.S. Nuclear Regulatory Commission, October 1966 (emphasis added).

The eight facilities described in Contention 6 clearly pose a danger to the PFSF, and all information required by NUREG-1567 should be provided with respect to each. PFS claims that there is no evidence the proposed PFSF could be affected or endangered by the eight enumerated facilities. In Contention 6, Castle Rock described several accidents that affected the Reservation or nearby lands, including a DOE experiment at Dugway Proving Grounds that spread nerve-gas over a portion of the Skull Valley and killed 6,400 sheep--and also apparently hastened the deaths of several people living on the Goshute Reservation. See Jim Woolf, Nerve Agent Near Dead Utah Sheep in '68, Salt Lake Tribune, January 1, 1998, at A1, a copy of which is attached hereto as Exhibit 8. In addition, just within the last few months the following relevant events have occurred: (1) a cruise missile at Dugway Proving Ground went astray and crashed into a trailer near the Goshute Reservation; see John Heilprin and Lee Siegel, Missile Take Wrong Turn at Dugway, Salt Lake Tribune, December 11, 1997, at A1, a copy of which is attached hereto as Exhibit 9; (2) there have been two separate crashes of F-16 fighter jets in the desert surrounding the Goshute Reservation; see John Heilprin and Greg Burton, Another F-16 Crashes

in West Desert, Salt Lake Tribune, January 9, 1998, at B-1, a copy of which is attached hereto as Exhibit 10, (3) the Envirocare Low-Level Waste Facility was cited for holding excess radioactive material; See Jim Woolf, Envirocare Fined for Excess Radiation, Salt Lake Tribune, December 11, 1997, a copy of which is attached hereto as Exhibit 11; and (4) the Tooele Army Depot Chemical Weapons Incinerator was issued 25 citations for violations of state hazardous waste rules. See Tooele Cited for HazWaste Violations, Greenwire, November 20, 1997, a copy of which is attached hereto as Exhibit 12. With such a range of serious accidents, explosion, and violations near the PFSF in a random few month period, PFS can not credibly claim that the eight enumerated facilities--individually and/or collectively--are not significant enough to require description under NUREG-1567. Abundant evidence indicates that the Goshute Reservation has been, and the safe operation of the PFSF may be, affected by any of the eight nearby facilities, and the Application fails to give any of the information required by NUREG-1567 or account for related accident scenarios. Accordingly, the Application is defective and Contention 6 should be admitted. See 54 Fed. Reg. 33,168, 33170 (1989) (where an applicant has filed incomplete documents or failed to supply necessary information, it "will be sufficient for the intervenor to explain why the application is deficient").

G. **Contention 7: Inadequate Financial Qualifications (Category - Other/Safety).**

The Application does not provide assurance that PFS will have the necessary funds to cover estimated construction costs, operating costs, and decommissioning costs, as required by 10 C.F.R. § 72.22(e) in that

1. PFS is a limited liability company with no known assets; because PFS is a limited liability company, absent express agreements to the contrary, PFS's members are not individually liable for the costs of the proposed PFSF, and PFS's members are not required to advance equity contributions. PFS has not produced any documents evidencing its members' obligations, and thus, has failed to show that it has a sufficient financial base to assume all obligations, known and unknown, incident to

ownership and operation of the PFSF; also, PFS may be subject to termination prior to expiration of the license;

2. the Application does not adequately account for possible shortfalls in revenue if customers become insolvent, default on their obligations, or otherwise do not continue making payments to the proposed PFSF;
3. the Application does not provide assurance that PFS will have sufficient resources to cover non-routine expenses, including without limitation the costs of a worst case accident in transportation, storage, or disposal of the spent fuel;
4. the Application fails to provide enough detail concerning the limited liability company agreement between PFS's members, the Service Agreements to be entered with customers, the business plans of PFS, and the other documents relevant to assessing the financial strength of PFS;
5. the Application fails to describe the legal obligations of the Skull Valley Band of Goshute Indians and provide assurance that third parties will have adequate legal remedies if injured as a result of the its acts or omissions; and
6. the Application fails to itemize cost estimates and otherwise provide enough detail to permit evaluation of the tenability of such estimates.

Reply:

1. PFS Impermissibly attempts to Shift the Burden of Proof.

In general, PFS has miserably failed to satisfy its obligation under 10 C.F.R. section 72.22(e) "to demonstrate to the Commission the financial qualifications of the applicant" to construct, operate, and decommission the PFSF, and PFS has impermissibly attempted to shift the burden of proof onto Castle Rock. Nothing could be more crucial to PFS's Application, or more in doubt, than PFS's financial capacity as a private entity to bear both the quantifiable and unforeseeable costs of the proposed PFSF. One seeking to perform an analysis of PFS's financial capacity would reasonably expect the Applicant to have provided a financial plan showing (i) an estimate of the costs of each phase of the project with detailed time line and cost

category breakdowns, (ii) a financial statement for the Applicant showing its current financial condition, (iii) pro forma financial statements projecting the financial condition of the Applicant through each of the phases of the project, (iv) identification of the specific sources of funds, (v) details of existing funding agreements, (v) commitments from sources of additional funds including commitments from lenders, equity contributions, and customers whose funds are being relied upon to fund the PFSF, (vi) details of prospective funding agreements, and (vii) details of contingency plans for obtaining additional funding for overruns or costs arising from unforeseen events such as systems failures, funding contract defaults, or accidents. PFS has failed to provide any of these documents.

Instead of providing adequate information, PFS has attempted to escape its burden of demonstrating its financial qualification by arguing that Castle Rock has failed to provide facts showing that PFS does not have the requisite financial capacity--suggesting that an astute applicant should provide as little detail as possible concerning its financial qualifications so that opponents cannot challenge them. As stated in detail in Section II supra, contrary to PFS's claims, 10 C.F.R. Section 2.714(b)(2) "does not shift the ultimate burden of proof from the applicant to the Petitioner." Yankee Atomic Electric Company (Yankee Nuclear Power Station, 43 N.R.C. 235, 1996 NRC LEXIS 32, *28 (1996); see also Rules of Practice for Domestic Licensing Proceedings, 54 Fed. Reg. 33,168, 33171 (1989)("The revised rule does not shift the ultimate burden of persuasion on the question of whether the permit or license should be issued; it rest with the applicant."). Moreover, the intervenor's burden of alleging a factual basis for a contention is especially light in situations where the essential information--i.e. all information related to PFS's financial capacity and arrangement--is entirely in the hands of the applicant.

See York Committee for a Safe Environment v. N.R.C., 527 F.2d 812, 815-16 n.12 (D.C. Cir. 1975). Furthermore, where the applicant has filed incomplete documents or failed to supply necessary information, it "will be sufficient for the intervenor to explain why the application is deficient." 54 Fed. Reg. 33,168, 33170 (1989); 10 C.F.R. § 2.714(b)(2)(iii). PFS cannot dodge its obligation to provide sufficient information about its financial qualifications by revealing only sketchy generalizations and shifting the burden to its opponents to counter with detailed information that is available only to it.

2. First Basis: PFS's Status as an L.L.C. Makes Its Financial Strength Suspect. As explained in Contention 7, PFS has not shown that it has the necessary assets to construct, operate, and decommission the PFSF. Moreover, because PFS is a limited liability company, any evidence of the financial capacities of its members does not meet this burden, unless PFS also affirmatively demonstrates that its members will guarantee all obligations of PFSF, have the capacity to guarantee such obligations, and will otherwise provide equity to sustain the PFSF on an as needed basis. The Application contains no such information; nor does it provide information indicating that PFS will continue to exist into the future. Thus, NRC has no assurance that PFS will even exist in year 2002 when the PFSF is supposed to begin operating.

PFS's comparison of its status to that of Castle Rock strengthens Castle Rock's position. PFS suggests that its status as a limited liability company is irrelevant because the limited liability status of its members is akin to the limited liability of shareholders of a corporation. (PFS Response at 363). That is exactly the point of Castle Rock's contention. Just as the financial capacity of a corporation must stand alone without regard to the financial strength of

its shareholders, so too must the financial strength of the limited liability company like PFS be measured without regard to the financial capacity of its members. PFS's large public utility members have no more liability for funding the entity than they would if they were shareholders in a corporation. Because the Application does not presently provide anything but bald generalizations as to PFS's financial capacity, and conspicuously fails to details the relations of PFS's members to PFS, it is inadequate, and Contention 7 must be admitted.

3. Second Basis: PFS Must Demonstrate that the Service Contracts Can Sustain Its Operating and Decommissioning Costs. PFS plans to finance its ongoing operation "solely through annual payment by customers pursuant to the Service Agreement." (Application 1.6). Nevertheless, PFS's description of such proposed agreements is limited to a brief paragraph, which could be fairly summarized as "trust us." See (Application 1.6, 1.7). Moreover, PFS has supplied no surveys or commitments indicating that nuclear power plants would be willing to sign such agreements in the event the PFSF is constructed. (The existence of a domestic market for PFSF's storage services is questionable in light of pending government-sponsored storage sites). It is PFS's burden to demonstrate that it has the financial capacity to cover all estimated operating costs of the proposed PFSF. (10 C.F.R. § 72.22(e)). PFS's brief and unsupported assertions about the substance of hypothetical service agreements do not meet that burden. Accordingly, the Application is inadequate, and Contention 7 must be admitted.

4. Third Basis: PFS Must Provide a Financial Plan Detailing Its Means For Covering All Routine and Non-Routine Expenses. To be credible, a financial plan must provide for contingency expenses.

Once such a plan is presented, expertise can be brought to bear in examining the assumptions used to identify the contingencies and the adequacy of the funding sources to meet the attendant costs. PFS remains consistent in trying to dodge the Contention by saying that Castle Rock has the burden of providing the threshold data. Until PFS provides a detailed, credible financial plan, subject to testing and evaluation, Castle Rock will remain unable to provide expert opinion as to its weakness. PFS has not provided such a plan, and accordingly, Contention 7 must be admitted.

5. Fourth Basis: PFS must Provide all Key Agreements and Other Documents. The Application must include copies of any agreements related to debt or equity funding, PFS's business plan, a complete copy of its lease with the Tribe, all agreements and plans related to construction of a transportation corridor, and all agreements related to or governing the obligations of PFS's members. As PFS has done with regard to the whole of Contention 7, PFS seeks to shift place on Castle Rock the burden of providing a detailed criticism of relevant documents, when PFS has not yet provided information and documentation sufficient to support such analysis.

With respect to the specific financial information required by 10 C.F.R. Part 50, the Commission recognized that particular circumstances may warrant application of any or all of the criteria imposed by 10 C.F.R. Part 50 in a Part 72 application. Louisiana Energy Services, L.P. (Claiborne Enrichment Center), CLI-97-15, slip op., at 14 (December 18, 1997). Because PFS has no operating history and essentially no assets, application of the Part 50 requirements to PFS is appropriate.

6. Fifth Basis: PFS Must Show that the Tribe Will Accountable for its Actions. PFS has produced an excerpted copy of the Amended and Restated Business Lease dated May 20, 1997, between PFS and the Tribe (the "Lease"), a copy of which is attached hereto as Exhibit 13. As Lessor under the Lease, the Tribe may be in a position to evict PFS, impose substantial burdens on the PFSF, or otherwise interfere with safe operation of the PFSF. Although there are provisions in the Lease suggesting the Tribe's power to do so may be limited, PFS has characteristically omitted Section 4(C)(1) (related to termination of the Lease), parts of Section 27 (related to waiver of sovereign immunity), Section 35(A)(1)(related to the enforceability of the Lease against the Tribe), and other provisions limiting the Tribe's power or outlining its willingness to submit to United State or local courts. Having received only a partial copy of the Lease, no party can be sure whether PFS has left open the possibility that the Tribe evict PFS or otherwise interfere with safe operation of the PFSF or whether the Tribe will be subject to non-Tribal courts.

In addition, in view of the limited assets of PFS, the Tribe (as landlord) may be ultimately responsibility for damages cause by a unsafe, contaminating, abandoned and/or insolvent facility. Accordingly, it is essential that the Application include a description of the Tribe's obligation and financial ability to compensate third parties for accident or injuries arising in relationship to the PFSF. Until the Application demonstrates that the PFSF is free from interference from the Tribe, and that the Tribe is legally obligated and financially able to compensated third parties, the Application remains defective, and Contention 7 must be admitted.

7. Sixth Basis: PFS must Itemize its Cost Estimates. Once again, it seems obvious that the absence of details as to specific cost items in the Application is a per se failure to meet the financial qualification criteria imposed by 10 C.F.R. § 72.22(e). Neither Castle Rock, the Staff, other intervenors, nor the Licensing Board can even begin to evaluate PFS's ability to finance construction, operation, and decommissioning of the proposed PFSF until a clear breakdown of projected costs is presented.

The importance of a detailed decommission plan is heightened by the fact that not only logic, but also DOE projections, make it clear that it will take decades to decommission the PFSF. As explained above, if and when a permanent repository is up and running, it is expected to receive additional spent fuel at the pace of only 900 MTU per year. See DOE/RW-1457, Department of Energy Annual Capacity Report (OCRWM: March 1995), attached hereto as Exhibit 1. Thus, PFS will not be able to decommission at once, or even in a few years. At the rate of 900 MTU per year--and that assumes the repository receives spent fuel from no source other than the PFSF--it will take 44 years for the repository to absorb 40,000 MTU of spent nuclear fuel. Accordingly, the PFSF will have to continue to store at least some fuel more than four decades beyond its proposed or intended decommissioning date. To supply the assurance required by 10 C.F.R. section 72.22(e), the decommissioning plan must take into account, among other things, the more than 40 years it will take the proposed repository to absorb all of the spent nuclear fuel stored at the PFSF.

H. Contention 8: Groundwater Quality Degradation (Category--Environmental/Safety). The Application, including the ER, is defective and therefore raises the issue of risk to public health and safety because the proposed site of the PFSF will not, or cannot, be adequately protected against ground water contamination due to facility design, its location, contaminants it will generate, and the nature of the soils and bedrock of the area.

Reply:

The Application does not adequately address the credible problem of groundwater contamination. PFS does not dispute that contaminants in the ground water would flow northward and contaminate Castle Rock's wells. Moreover, PFS does not provide any explanation supporting its denial of the self evident fact that absent protective barriers, waste water generated at the PFSF will eventually seep into the groundwater. PFS's only argument is that there is no conceivable way water and contaminants will ever mix at the PFSF. This assumption is simply not credible. The Application contemplates decontamination of caskets at the PFSF, which will produce contaminated fabrics, rags, and other materials. (SAR 4.5). If any decontamination materials are misplaced, left out, or affected by floods or fire fighting efforts, mixture with water is possible. There are also possibilities that casks will be broken in the process of transportation or as a result of fire, explosions, earthquakes, or sabotage at the facility. If a fire occurred in conjunction with any decontamination activity, receipt of a broken cask, or on-site damage a cask, contaminated water would certainly escape. There is a credible possibility of groundwater contamination, and the Application fails to address it; accordingly, the Application is inadequate, and Contention 8 should be admitted.

- I. **Contention 9: Regional and Cumulative Environmental Impacts (Category - Environmental, Safety)**. The Application fails to adequately discuss the regional and cumulative environmental impacts of the proposed PFSF, as required by 10 C.F.R. §§ 72.98(b) & (c) and 72.100, and NEPA, in that:
 1. the SAR and ER fail to address the cumulative regional health and safety impact of the ISFSI and other dangerous facilities in Tooele County, including without limitation issues regarding the cumulative impact to the regional environment and population;
 2. the SAR and ER fail to address the cumulative quantitative risk to the public of numerous dangerous facilities in one area and the interrelated

transportation, sabotage, and accident risks arising from concentration of such facilities.

Reply:

The Application fails to adequately address the cumulative and quantitative regional health, safety and environmental impacts resulting from the concentration of dangerous facilities in Tooele County. Section 72.98(c) requires the Application to include an identification of the "potential regional impacts" of the project and an investigation of "present and future uses of the land". In addition, Section 72.100 of NEPA requires the Application to contain an evaluation of the effects on the "regional environment" and the "populations in the region". Section 122(e) requires analysis of the "cumulative effects" of the combined operation of other nuclear facilities "near" a proposed ISFSI. The approximately five mile radius used by PFS, and supported by the Staff, is too narrow. The regulations speak in terms of "regional impacts," "regional environment," and "near." As discussed in Castle Rock's reply regarding Contention 6, accidents, near-accidents, and violations are a frequent occurrence at the eleven enumerated dangerous facilities in Tooele County--many of which have, or certainly could, affect the area where the PFSF is proposed to be sited. The 6,800 sheep killed by a nerve gas release in 1968 were owned by Castle Rock's predecessors and located on the ranches abutting the Goshute Reservation. See Nerve Agent Near Dead Utah Sheep in '68, Salt Lake Tribune, January 1, 1998, at A1, a copy of which is attached hereto as Exhibit 8. The cruise missile that recently went awry at Dugway Proving Ground landed within 20 miles of the Goshute Reservation. See John Heilprin and Lee Siegel, Missile Take Wrong Turn at Dugway, Salt Lake Tribune, December 11, 1997, at A1, a copy of which is attached hereto as Exhibit 9. The numerous nuclear waste, nerve gas, weapons testing, weapons storage, hazardous waste incineration and

other facilities in Tooele County cannot remain unaffected by each other's accidents and the danger to the public and environment increases significantly as each new facility is added. Caselaw supports the proposition that an EIS is defective if it fails to analyze and address the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other action (See e.g., Fritiofson v. Alexander, 772 F.2d 1225 (5th Cir. 1985); Thomas v. Peterson, 753 F.2d 754 (9th Cir. 1985). See also 40 C.F.R. §§ 1508.7 & 1508.25). Certainly the facts of this case--with at least eleven facilities conducting dangerous activities within the same county--require more than a bare bones analysis or more than a cursory look at one or two such facilities. The Application fails to adequately address the cumulative effect on the population and environment of the numerous dangerous facilities concentrated in Tooele County. Accordingly, the Application is defective and Contention 9 should be admitted.

- J. **Contention 10: Retention Pond (Category - Environmental)**. The Application, including the ER, is defective and therefore raises public health and safety risks because it does not adequately address the potential of overflow and groundwater contamination from the retention pond and the environmental hazards created by such overflow, in that:
1. the ER does not does not address the potential for overflow from the retention pond;
 2. the ER does not address effluent characteristics and environmental impacts associated with seepage from the pond; and
 3. the ER does not address the applicability of Utah Groundwater Protection Rules.

Reply:

As it did with respect to Contention 8, PFS unreasonably assumes the "the material stored (spent fuel rod assemblies) and the method of storage (dry casks) precludes the possibility that

water will become contaminated at the facility." Such an assumption does not account for the possibility of fire in conjunction with a contaminated or damaged cask, improper disposal of cleaning materials, sabotage, explosion, flood, or simple human error or inattention. There are numerous credible scenarios for the water in the retention pond to become contaminated--and either overflow or seep into the subsoils and groundwater. Because the Application does not address such credible scenarios, it is defective, and Contention 10 must be admitted.

- K. **Contention 11: Radiation and Environmental Monitoring (Category - Environmental, Safety, Other)**. The Application poses undue risk to the public health and safety and fails to comply with 10 C.F.R. § 72.22, § 72.24 and § 72.126 because it fails to provide for adequate radiation monitoring necessary to facilitate radiation detection, event classification, emergency planning, and notification, including systematic baseline measurements of soils, forage, and water either near the PFSF site, or at Petitioners' adjoining lands.

Reply: None.

- L. **Contention 12: Permits, Licenses and Approvals (Category - Environmental, Safety, Other)**. The Application violates NRC regulations and NEPA because the ER fails to address adequately the status of compliance with all Federal, State, regional and local permits, licenses and approvals required for the proposed PFSF facility, see, e.g., 10 C.F.R. §§ 51.45(d) and 51.71(d), in that:

1. the ER fails to contain the list all permits, licenses and approvals, or include a description of the status of compliance with applicable environmental quality standards and requirements;
2. the ER fails to definitely identify transportation corridors and to identify facts about affected streams and wetlands relevant to obtaining a so-called Dredge & Fill Permit;
3. the ER fails to discuss whether the Tribe has been, or on what basis it would be, granted CWA authority by the EPA;
4. the ER contains insufficient facts relevant to assessing the applicability of air quality permitting;
5. the ER does not contain facts essential to addressing State of Utah permitting requirements, or definitively list which requirements do apply;

6. the ER does not address the need for approvals from Castle Rock in order to widen the Skull Valley Road.

Reply: In its response, PFS argues that Castle Rock does not describe which permitting requirements the ER fails to address. Where the applicant has filed incomplete documents or failed to supply necessary information, it "will be sufficient for the intervenor to explain why the application is deficient." (54 Fed. Reg. 33,168, 33170 (1989); 10 C.F.R. § 2.714(b)(2)(iii)). PFS has not provided the facts and initial analysis essential for determination of the applicability of permitting, licensing, and approval requirements. For example, the ER provides that "several specific environmentally sensitive areas have been identified along the transportation corridor and may require special consideration during construction activities." (ER at 4.3-2, 2-3). PFS does not describe these areas, why they may require special consideration, or what special consideration may be required. Once PFS has come forth with a detailed discussion of facts relevant to permitting, licensing and approvals, Castle Rock will be in a position to offer affirmative information about which requirements do and do not apply.

M. **Contention 13: Inadequate Consideration of Alternatives (Category - Environmental, Safety, Other)**. The Application violates NRC regulations and NEPA because the ER fails to give adequate consideration to alternatives, including alternative sites, alternative technologies, and the no-action alternative, see 10 C.F.R. § 51.45(c), in that:

1. the ER does not adequately discuss the environmental effects and impacts or the economic, technical and other costs or benefits associated with its selection of the Goshute Reservation over alternative sites;
2. the ER does not contain a balanced, detailed discussion of the no build alternative;
3. the analysis of alternatives ignores every potential negative factor, including:

- a. the environmental and safety benefits associated with maintaining a decentralized, on-site storage system;
 - b. the environmental and safety impacts and risks associated with the proposed privately operated centralized system;
 - c. the state-by-state, plant-by-plant facts which create the need for moving spent fuel to a centralized location;
 - d. the environmental impacts and safety hazards associated with moving so many casks from dispersed locations to a centralized location;
 - e. the environmental benefits of a combination of expanded onsite storage and regional ISFSIs; and
 - f. the heightened safety hazards associated with transportation of spent fuel during the 2002 Olympics Games;
4. the ER does not contain a discussion of the environmental advantages and disadvantages associated with the government-operated temporary facility proposed in the 1997 NWPAs.

Reply: The ER must include an analysis of the effects of the ranch on neighboring landowners, including Castle Rock. Among other things, 10 C.F.R. § 51.45(c) requires the ER to "include an analysis that considers and balances the environmental effects of the proposed action, the environmental impacts of alternatives to the proposed action, and alternatives available for reducing or avoiding adverse environmental effects." This subsection also requires the ER to "include consideration of the economic, technical, and other benefits and costs of the proposed action and of alternatives." One economic effect and cost of placing the PFSS on the Goshute Reservation is the effect of the facility on the value of Castle Rock's land and the usefulness of Castle Rock's land for agricultural and development purposes. (See infra Reply to Contention 17, incorporated herein by reference). In order to fulfill the requirement of considering "the economic . . . benefits and costs of the proposed action and of alternatives," the ER must consider the economic cost to Castle Rock of placing the facility on the Goshute Reservation, and the economic benefit to Castle Rock of not placing it there. The Application

fails to describe this economic effects of the PFSF on Castle Rock, and all other information described in Contention 13, and accordingly, Contention 13 should be admitted. a)

Contention 14: Inadequate Consideration of Impacts (Category - Environmental).

The Application violates NRC regulations and NEPA because the ER fails to give adequate consideration to the adverse impacts of the proposed PFSF, including the risk of transportation accidents, the risks of contamination of human and livestock food sources, the risks of contamination of water sources (including ground water contamination arising from leaching of contaminated soils), the risks of particulate emissions from construction and cement activities and similar risks. 10 C.F.R. § 72.100.

Reply: None.

N. **Contention 15: Cost-Benefit Analysis**. The Application violates NRC regulations and NEPA because the ER does not contain a reasonable and legitimate comparison of costs and benefits, 10 C.F.R. § 51.45(c), in that:

1. it is over simplistic and fails to account for the true environmental, safety, social and economic costs associated with the proposed PFSF;
2. it fails to consider the loss of property values, economic opportunities and other business and economic losses that will be imposed on Castle Rock by the mere existence of the PFSF;
3. it does not describe PFS's financial arrangement with the Tribe or attach related documents, which are essential the evaluation of the full cost of the facility.

Reply: None.

O. **Contention 16: Impacts on Flora, Fauna and Existing Land Uses (Category - Environmental)**. The Application violates NRC regulations and NEPA because the ER does not adequately address the impact of the proposed PFSF upon the agriculture, recreation, wildlife, endangered or threatened species, and land quality of the area, see 10 C.F.R. § 72.100(b), in that:

1. the ER fails to evaluate both usual and unusual site characteristics throughout all of Northwestern Utah;
2. the ER fails to provide sufficient facts to enable one to understand the true impacts of the PFS on the environment, including without limitation information from a survey of endangered or threatened species in the area (including small spring parsley, Pohl's milvetch, peregrine falcon, and the Skull Valley Pocket gopher);

3. the precise transportation corridor has not been identified, and thus the Application does not contain specific information about affected species in the transportation corridor.

Reply: None.

P. **Contention 17: Inadequate Consideration of Land Impacts (Category - Environmental)**. The Application violates NRC regulations and NEPA because the ER does not adequately consider the impact of the facility upon such critical matters as future economic and residential development in the vicinity, potential differing land uses, property values, the tax base, and the loss of revenue and opportunity for agriculture, recreation, beef and dairy production, residential and commercial development, and investment opportunities, all of which have constituted the economic base and future use of Skull Valley and the economic interests of Petitioners, or how such impacts can and must be mitigated, see e.g., 10 C.F.R. §§ 72.90(e), 72.98(c)(2) and 72.100(b), in that:

1. the ER does not recognize the potential use of the areas surrounding the PFSF for residential or commercial development;
2. the ER paints a misleading picture of the area population by ignoring a majority of the Salt Lake Valley;
3. the ER fails to consider the effect of the PFSF on the present use of Castle Rock's lands for farming, ranch operations and residential purposes or the projected use of such lands for dairy operations, residential development, or commercial development;
4. the ER provides no, or inaccurate, information on the economic value of current agricultural/ranching operations conduct on Castle Rock's lands; and
5. the ER fails to discuss the impact of placing a spent fuel storage facility near a national wilderness area.

Reply:

The ER must consider the effect of the PFSF on the present and future projected uses of Castle Rock's land. Contrary to PFS's arguments, 10 C.F.R. Section 72.98 expressly requires an application to consider "present and projected future uses of land and water within the region." It is well established that NEPA protects economic interests which are connected

to the land. See Jersey Central Power and Light Co. (Forked River Nuclear Generating Station, Unit 1), ALAB-139, 6 AEC 535 (1973) (marina operators have standing under NEPA to complain of the introduction of shipworms in the vicinity of their business resulting from the operation of a nuclear power plant); Pacific Gas and Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-223, 8 AEC 241 (1974) (commercial fisherman has standing under NEPA to complain of the discharge of cooling water which may affect his catch). As described in the letter of Gregg Simonds, attached hereto as Exhibit 14, Castle Rock owns 67,000 acres of next to the Goshute Reservation (the "Ranchland"). (Id.). The present uses of the Ranchland include grazing cattle, raising horses, farming, and residential uses. Because of public concerns about food safety, especially with respect to beef, the trend in the beef industry is toward forming alliances among feeders, producers, packers, and retailers that involve "source verification"--i.e. establishment of a mechanism for verify the participants in, and cleanliness of, the chain of production for beef. (Id.). Beef produced in an open, free ranging, wilderness-like environment is perceived to be cleaner, safer, and more valuable than beef produced elsewhere. (Id.). Construction and operation of the PFSF will inhibit, if not eliminate, Castle Rock's ability to market beef raised on the Ranchland as being "clean" range beef. This will keep Castle Rock from being a part of the developing alliances and from realizing the premiums that beef marketed through such alliances will command. (Id.). The ER must discuss the PFSF's effect making the Ranchland ineligible for certification as a clean, open range for raising cattle.

In addition, as discussed in Castle Rock's Reply regarding Contention 8, there is a credible possibility that contaminated water from the PFSF will enter the wells under, and used by, the Ranchland. Contamination of well water will make the Ranchland generally unsuitable

for raising cattle or horses or for farming--and at a minimum would decrease the usefulness of the Ranchland for such purposes. Id. Also, the dust, noise and an increased risk of accidents resulting from the increase in heavy-load traffic on the Skull Valley Road associated with the construction and operation of the PFSF will diminish the usefulness of the Ranchland for ranching or farming operation. (Id.). NEPA protects Castle Rock's economic interest in the Ranchland, and the ER must address the affects of the PFSF on the ranching and farming operations currently conducted thereon.

In addition, Castle Rocks projects that the future uses of the Ranchland include development for commercial or residential purposes or dairy operations. As discussed in the letter from Christopher E. Robinson, attached hereto as Exhibit 15, the value of the Ranchland for development purposes lies in it being in a remote, rather undisturbed, desert location. Id. Construction, dusty, increased traffic, public perception of danger, and actual danger of accidents related to the PFSF will substantially reduce, if not eliminate, the value of the Ranchland for commercial or residential development. (Id.). Although the ER mentions the existence of some ranching operations on the Ranchland in passing, the ER fails to fully consider these and other effects of the PFSF on the Ranchland's present and projected uses, as required by 10 C.F.R. § 72.98 and NEPA. Accordingly, the ER is inadequate and Contention 17 must be admitted.

- Q. **Contention 18: Impacts on Public Health (Category - Environmental)**. The Application violates NRC regulations and NEPA because the ER does not adequately consider the impact of the proposed PFSF upon the production of the agricultural products for human consumption by Petitioners, their tenants and others in the area. See 10 C.F.R. § 72.98(b).

Reply: Castle Rock incorporates by reference its Reply regarding Contention 17.

- R. **Contention 19: Septic Tank (Category - Environmental)**. The Application violates NRC regulations and NEPA because the ER does not adequately consider the impact of a septic tank system on the ground water and ecology of the area and the related potential of this system to injure Petitioners. See 10 C.F.R. §§ 72.98(b) and 72.100(b).

Reply: None.

- S. **Contention 20: Selection of Road or Rail Access to PFSF Site (Category - Environmental, Other)**. The Application violates NRC regulations and NEPA because it fails to describe the considerations governing selection of either the Skull Valley road or the rail spur access alternative over the other and the implications of such selection in light of such considerations, See 10 C.F.R. §§ 51.45(c) and 72.100(b), in that:

1. the ER fails to consider and balance the advantages and disadvantages of the two transportation alternatives, except in a cursory manner;
2. the ER concedes, and evidences, that certain investigations and studies related to the selection of a transportation corridor, including a Class II Cultural Resources Survey, have not been completed;
3. the ER does not discuss the third transportation corridor PFS is considering; and
4. the ER fails to mention some significant environmental effects associated with the two acknowledged transportation alternatives, including an increased traffic and noise levels.

Reply: None.

- T. **Contention 21: Exact Location of Rail Spur (Category - Environmental, Other)**: The Application violates NRC regulations and NEPA because it fails to describe in detail the route of the potential rail spur, property ownership along the

route, and property rights needed to construct and operate the rail spur, See 10 C.F.R. § 72.90(a), in that:

1. the ER fails to provide any detail concerning the precise location of the proposed rail spur and impacted on property rights along the route;
2. the ER is defective because it does not discuss the second rail spur being considered by PFS.

Reply: None.

- U. **Contention 22: Road Expansion Authorizations (Category - Environment, Other)**. The Application violates NRC regulations and NEPA because it fails to describe adequately the nature and ownership of right-of-way that would permit PFS's contemplated improvements of the Skull Valley Road and what permits and approval from, or agreements with, the owner or owners thereof are needed for such improvements. See 10 C.F.R. § 72.90(a).

Reply: None.

- V. **Contention 23: Existing Land Uses (Category - Environmental)**. The Application violates NRC regulations and NEPA because it fails to describe with particularity, using appropriate maps, land use patterns and ownership as to lands in the vicinity of the proposed PFSF and along the 24 mile access route, including without limitation, homes, outbuildings, corrals and fences, roads and trails, pastures, crop producing areas, water wells, tanks and troughs, ponds, ditches and canals, see 10 C.F.R. §§ 72.90(a) & (c), 72.98(b), in that:

1. the Application fails to discuss, in detail, the various impacted property rights and owners along the 24-mile transportation corridor;
2. the Application fails to discuss the legal basis for the right-of-way along the 24-mile transportation corridor;
3. the Application fails to identify existing structures that would be impacted by the various transportation corridors suggested by PFS;
4. the Application fails to discuss impacts to existing grazing patterns and rights that would be impacted by the various transportation corridors proposed by PFS;
5. the Application fails to discuss all impacts to those living near to the proposed transportation corridors; and

6. the Application fails to discuss other deficiencies.

Reply: None.

W. Contention 24: Incorporation by Reference (Category - Other/All). Petitioners Castle Rock and Skull Valley Co. by this reference adopt in its entirety each and every contention filed by the State of Utah and incorporate each herein by this reference.

Reply: See Section I(A) supra.

Dated this 7 day of January, 1998.

Respectfully submitted,



Michael M. Later, USB #3728

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DOCKETED
USNRC

Certificate of Mailing

I hereby certify that I caused to be sent by E-Mail and U.S. Express Mail two copies of the foregoing REPLY OF PETITIONERS CASTLE ROCK LAND & LIVESTOCK, L.C. AND SKULL VALLEY CO., LTD, AND ENSIGN RANCHES OF UTAH, L.C. TO THE RESPONSES OF THE NRC STAFF AND THE APPLICANT to the following:

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and also certify that I caused to be sent by facsimile and Federal Express overnight courier service, a copy of the foregoing to the following:

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Dated this 16th day of January, 1998.

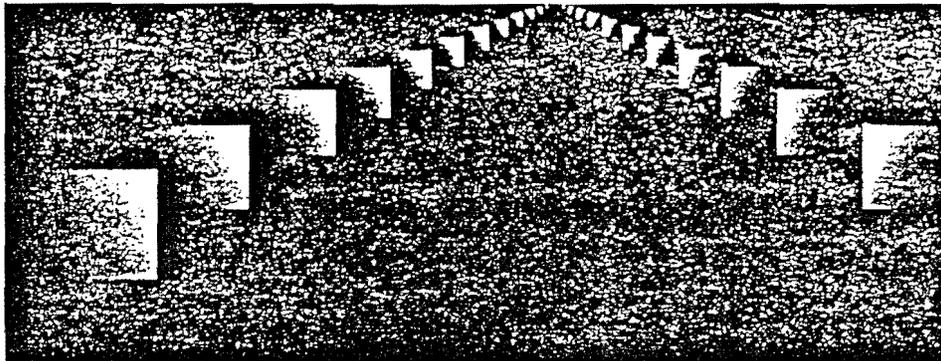
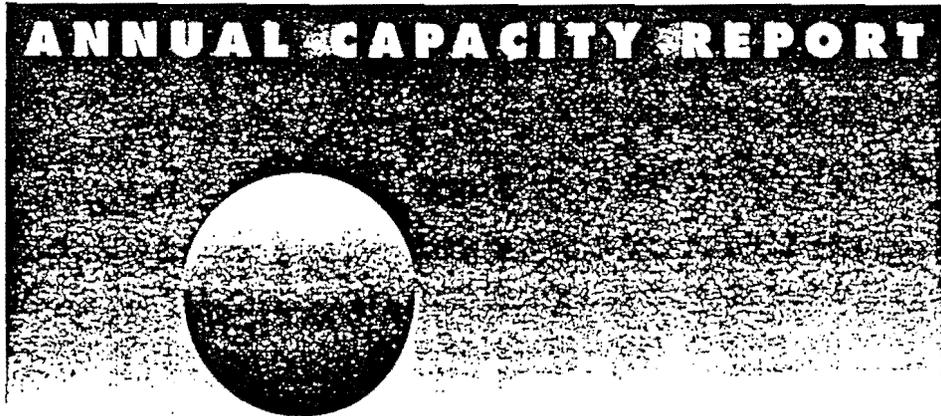


DeAnn Thompson

EXHIBIT 1

ACCEPTANCE PRIORITY RANKING
&

ANNUAL CAPACITY REPORT



U . S . D E P A R T M E N T O F E N E R G Y
O F F I C E O F C I V I L I A N R A D I O A C T I V E W A S T E M A N A G E M E N T
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DECOM 2

1.0 INTRODUCTION

The Nuclear Waste Policy Act of 1982, as amended (the Act)¹, assigns the Federal Government the responsibility for the disposal of spent nuclear fuel and high-level waste. The Director of the Department of Energy's Office of Civilian Radioactive Waste Management (the Department) is responsible for carrying out the functions assigned to the Secretary of Energy by the Act. Section 302(a) of the Act authorizes the Secretary to enter into contracts^{*} with the owners and generators^{**} of commercial spent nuclear fuel and/or high-level waste. The Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste² (Standard Contract) established the contractual mechanism for the Department's acceptance and disposal of spent nuclear fuel and high-level waste. It includes the requirements and operational responsibilities of the parties to the Standard Contract in the areas of administrative matters, fees, terms of payment, waste acceptance criteria, and waste acceptance procedures. The Standard Contract provides for the acquisition of title to the spent nuclear fuel and/or high-level waste by the Department, its transportation to Federal facilities, and its subsequent disposal.

The Standard Contract requires the Department to issue an annual Acceptance Priority Ranking (APR) report and an Annual Capacity Report (ACR). The APR establishes the order in which the Department allocates the projected acceptance capacity for commercial spent nuclear fuel. The ACR applies projected nominal acceptance rates for the system to the priority ranking in the APR, resulting in individual allocations for the owners and generators expressed in metric tons of uranium (MTU). These capacity allocations, as listed in the ACR, form the basis for the Purchasers' submittal of Delivery Commitment Schedules (DCS). As specified in the Standard Contract, the ACR is for planning purposes only and, thus, is not contractually binding on either DOE or the Purchasers.

^{*}Individual contracts are based upon the Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste (10 CFR Part 961).

^{**}Owners and generators of spent nuclear fuel and high-level waste who have entered into agreements with the Department and/or have paid fees for purchase of disposal services are referred to as "Purchasers."

In reviewing the data provided by Purchasers for preparation of the 1993 APR, the Department determined that discrepancies in the weights of the discharged fuel assemblies existed. These discrepancies were between the information provided by Purchasers on Annex B to Appendix G of the Standard Contract and information being provided by Purchasers on the Nuclear Fuel Data Form, RW-859. The Department initiated a review to determine the cause of these discrepancies in order to ensure consistency and accuracy of the detailed information used in the APR. This review, which was limited to fuel that was permanently discharged, incore, or temporarily discharged as of April 7, 1983, resulted in numerous minor adjustments to previously reported APR values. Previous editions of the APR, which reported discharges to a 0.01 MTU level of precision, required numerous adjustments as Purchasers implemented various fuel management activities. The Department has determined that this level of precision is not necessary for allocating nominal waste acceptance capacity. Therefore, beginning with this publication, all discharges in the APR will be listed to the 0.1 MTU level of precision. Consequently, the ACR and subsequent DCS reviews will also be to the 0.1 MTU level of precision. Since this change in precision was applied uniformly to the entire APR, changes from the 1992 report caused by the change in precision are not individually explained, however all other changes reported by the Purchasers are listed and explained in Appendix C. In all cases, adjustments to previously reported values have been made by rounding up to the next highest 0.1 MTU. An annual nominal waste acceptance capacity was used to assure that no Purchaser had been impacted adversely with respect to a waste acceptance allocation as compared to an allocation reported in previous editions of the ACR.

The length and thoroughness of this review delayed the issuance of the 1993 ACR and APR. The information from the 1993 APR and ACR is combined with this report. In an effort to reduce the administrative burden associated with the publication of separate ACR and APR reports, the Department has decided to issue a consolidated APR/ACR Report for 1994 and subsequent years. The 1994 APR/ACR Report has been printed in a loose-leaf binder format, to allow for the updating of selected pages rather than revision of the entire report.

1.1 BASIS FOR THE ACCEPTANCE PRIORITY RANKING

As required by the Standard Contract, the APR is based on the date the spent nuclear fuel was permanently discharged, with the oldest spent nuclear fuel, on an industry-wide basis, given the highest priority. The phrase "date the spent nuclear fuel was permanently discharged" means the date the reactor went subcritical for the purpose of permanently discharging the spent nuclear fuel, as reported to the Department by the Purchasers on the Nuclear Fuel Data Form, RW-859. The APR is the basis for allocating projected spent nuclear fuel (SNF) acceptance capacity in the ACR. The 1994 APR listing is based on SNF discharges through December 31, 1993. The APR listing has been included as Appendix A.

Revisions to the information base of this APR were, and in the future will be, addressed consistent with the Department's May 15, 1991, communication on the opportunity to verify the accuracy of the information contained in the draft version of the 1991 APR. Discharges that were not identified during the comment period on the draft 1991 APR were assigned a Ranking Date (i.e. the end of the priority ranking of the report year). Future discharges will be added to the priority ranking based on their date of permanent discharge. If SNF currently designated as temporarily discharged is redesignated as permanently discharged (without subsequent irradiation), the date of redesignation will become the Ranking Date, instead of the date of actual discharge. Reinserted assemblies, previously designated as permanently discharged, will be removed from the priority ranking. Appendix C itemizes all of the differences between the 1992 APR and the 1994 APR which have resulted in changes to the overall ranking.

1.2 BASIS FOR THE ANNUAL CAPACITY REPORT

The ACR (see Appendix B) applies a 10-year projected nominal waste acceptance rate to the APR, resulting in individual capacity allocations. In the previous ACR, the projected nominal acceptance rate was based on the assumption of SNF acceptance beginning in 1998 at a Monitored Retrievable Storage facility prior to repository operations. Due to the uncertainty associated with the date of commencement of operation of the waste management system, the annual nominal waste acceptance rates are presented by year(s) of operation of the system rather

than by specific calendar year(s). The projected nominal acceptance rates also reflect the capacity limit imposed by the Act on such a storage facility prior to repository operations. These projected nominal waste acceptance rates are presented in Table 1. The Department will continue to process DCS submittals on an annual basis.

Table 1. Projected Nominal Waste Acceptance Rates for Spent Nuclear Fuel

<u>Year</u>	<u>SNF (MTU)</u>
Year 1	400
Year 2	600
Year 3	900
Year 4	900
Year 5	900
Year 6	900
Year 7	900
Year 8	900
Year 9	900
Year 10	<u>900</u>
TOTAL	8,200

Operation of the system with the nominal waste acceptance rates presented in Table I will result in the acceptance of 8,200 MTU of SNF for the first 10 years. This table provides only an approximation of the system throughput rates and is subject to change depending on Congressional action regarding the conditions for the siting, construction, and operation of an interim storage facility, if any, the repository, and the system design and configuration. The Department will further define and specify the system operating and waste acceptance parameters as the Program progresses, and inform the Purchasers accordingly. Until the SNF is accepted by the Department, Section 111(a)(5) of the Act assigns the waste owners and generators the primary responsibility to provide for, and pay the costs of, interim storage.

The Tables in Appendix B list the Purchasers' annual allocations for each of the first 10 years^{***} of projected CRWMS operation. Table 2 presents a summary of all Purchasers' annual allocations based on the nominal waste acceptance rates for the 10-year period covered by this report. Fuel assembly reinsertions identified during the reporting period ending December 31, 1993, have resulted in changes to the APR. Additionally, modifications have been made to reflect changes in weight of certain fuel assemblies as determined from the review of the Annex B information. The allocations in years 1 to 10 have been adjusted to reflect; 1) reinsertions of SNF previously identified as being permanently discharged; 2) cycle discharge date correction; and 3) updated weights from Annex B information. However, the projected nominal waste acceptance rates were adjusted for each of the allocation years so that the acceptance queue would not be impacted. The notes to Appendix B, Tables B.1 through B.10, identify and document the reasons for the changes affecting the first 10 years of projected CRWMS operation.

^{***} The term "year," when used in reference to capacity allocation in this report, means the calendar year, beginning January 1 and ending December 31.

TABLE 2. SUMMARY OF PURCHASERS' ANNUAL ALLOCATIONS (MTU)^a

PURCHASER	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	TOTAL
ALABAMA POWER COMPANY	--	--	--	--	--	21.2	--	--	24.4	12.9	58.5
ARIZONA PUBLIC SERVICE	--	--	--	--	--	--	--	--	--	--	--
ARK POWER & LIGHT COMP	--	--	--	23.3	28.2	--	30.2	--	46.4	--	128.1
BABCOCK AND WILCOX COM	--	--	0.1	0.1	--	--	--	--	--	--	0.1 ^b
BALTIMORE GAS & ELEC C	--	--	--	12.6	41.5	28.5	52.2	--	55.3	29.6	219.7
BOSTON EDISON COMPANY	--	3.9	25.5	82.6	--	--	11.5	5.6	--	42.7	171.8
CAROLINA POWER & LIGHT	--	70.1	24.3	23.7	50.5	32.1	20.6	93.1	--	49.6	364.0
CLEVELAND ELEC ILLUM C	--	--	--	--	--	--	--	--	--	--	--
COMMONWEALTH EDISON CO	21.1	60.5	154.5	121.9	164.2	175.3	66.9	107.8	98.2	98.3	1068.7
CONNECTICUT YANKEE ATO	65.5	22.5	19.8	21.8	21.9	20.2	--	21.9	--	21.9	215.5
CONSOLIDATED EDISON CO	3.0	27.7	32.8	--	27.1	--	28.3	2.3	22.2	--	143.4
CONSUMERS POWER COMPAN	--	2.5	87.4	2.7	27.4	3.5	26.5	--	2.9	30.8	183.7
DAIRYLAND POWER COOP	0.8	6.0	3.0	3.9	--	3.4	--	--	1.5	3.3	21.9
DETROIT EDISON COMPANY	--	--	--	--	--	--	--	--	--	--	--
U.S. DOE	22.8	6.4	3.3	4.5	7.3	72.9	16.4	--	3.3	20.0	156.9
DUKE POWER COMPANY	--	24.9	47.7	62.5	58.4	56.2	61.2	31.6	63.5	66.4	472.4
DUQUESNE LIGHT COMPANY	--	--	--	--	--	--	16.2	--	--	24.4	40.6
FLORIDA POWER & LIGHT	--	20.9	37.0	40.5	32.9	40.9	71.4	33.1	52.2	37.7	366.6
FLORIDA POWER CORP	--	--	--	--	1.4	--	26.1	20.5	--	30.2	78.2
G. E. URANIUM MGT.	145.2	--	--	--	--	--	--	--	--	--	145.2 ^b
GENERAL ATOMICS	0.1	0.1	--	--	0.1	--	--	0.1	0.1	0.1	0.1 ^b
GEORGIA POWER COMPANY	--	--	--	0.8	4.5	--	35.3	--	56.4	15.2	112.2
GPU NUCLEAR	31.1	43.0	46.8	49.5	33.9	55.3	--	27.6	--	--	287.2
GULF STATES UTILITIES	--	--	--	--	--	--	--	--	--	--	--
HOUSTON LIGHTING & POW	--	--	--	--	--	--	--	--	--	--	--
IES UTILITIES, INC.	--	--	15.4	13.9	21.8	0.8	--	16.6	15.5	--	84.0
ILLINOIS POWER COMPANY	--	--	--	--	--	--	--	--	--	--	--
INDIANA & MICH ELEC CO	--	--	--	28.6	29.2	--	62.5	27.9	69.8	--	218.0
KANSAS GAS AND ELECTRI	--	--	--	--	--	--	--	--	--	--	--
LONG ISLAND POWER AUTH	--	--	--	--	--	--	--	--	--	--	--
LOUISIANA POWER AND LI	--	--	--	--	--	--	--	--	--	--	--
MAINE YANKEE ATOMIC	--	26.4	57.9	27.3	--	50.7	--	26.3	28.2	--	216.8
MISSISSIPPI POWER & LI	--	--	--	--	--	--	--	--	--	--	--
NEBRASKA PUB POWER DIS	--	--	--	23.6	13.8	--	31.2	28.7	21.0	--	118.3
NEW YORK POWER AUTH	--	--	--	25.9	3.7	51.1	34.7	30.0	--	69.8	215.2
NORTH ATLANTIC ENERGY	--	--	--	--	--	--	--	--	--	--	--
NIAGARA MOHAWK POWER C	9.4	49.0	38.9	30.8	--	31.2	--	--	36.9	--	196.2
NORTHEAST UTIL SVC COM	5.5	40.7	28.2	24.3	41.9	26.6	28.1	59.1	--	28.4	282.8
NORTHERN STATES POWER	--	26.2	83.6	29.9	33.9	17.6	32.6	43.3	35.7	16.1	318.9
OMAHA PUB POWER DIST	--	--	9.4	12.9	19.0	16.4	--	14.8	--	14.6	87.1
PACIFIC GAS AND ELECT	7.3	6.0	2.6	13.3	--	--	--	--	--	--	29.2
PENNSYLVANIA POWER & L	--	--	--	--	--	--	--	--	--	--	--
PHILADELPHIA ELEC COMP	--	--	36.3	68.1	47.7	48.8	51.7	51.3	40.6	50.8	395.3
PORTLAND GENERAL ELEC	--	--	--	--	0.5	--	--	24.4	16.1	17.0	58.0
PUB SVC COMPANY OF COL	--	--	--	--	--	--	--	--	--	--	--
PUB SVC ELEC & GAS COM	--	--	--	--	--	--	17.5	29.5	--	25.8	72.8
ROCHESTER GAS & ELEC	32.0	4.6	24.4	16.1	16.2	15.7	--	14.2	5.9	6.8	135.9
SACRAMENTO MUNICIPAL UTI	--	--	--	9.3	--	26.0	--	30.2	19.0	--	84.5
SOUTH CAROLINA ELEC &	--	--	--	--	--	--	--	--	--	--	--
SOUTHERN CALIF EDISON	35.6	20.5	19.3	19.3	--	19.2	--	19.3	--	--	133.2
TENNESSEE VALLEY AUTHO	--	--	--	--	58.7	5.5	115.6	66.0	116.2	52.4	414.4
TEXAS UTILITIES GENERA	--	--	--	--	--	--	--	--	--	--	--
TOLEDO EDISON COMPANY	--	--	--	--	--	--	--	--	--	25.1	25.1
UNION ELEC COMPANY	--	--	--	--	--	--	--	--	--	--	--
VERMONT YANKEE NUCLEAR	--	72.9	--	12.0	8.7	27.5	25.7	17.0	--	22.2	186.0
VIRGINIA POWER	--	8.2	69.4	43.9	54.7	20.2	23.4	32.9	29.0	52.8	334.5
WASH PUB POWER SUPPLY	--	--	--	--	--	--	--	--	--	--	--
WISCONSIN ELEC POWER C	16.3	43.1	19.8	27.1	36.8	24.9	9.7	12.9	16.1	21.8	228.5
WISCONSIN PUB SVC CORP	--	--	4.4	17.7	16.1	--	5.3	13.3	16.5	14.5	87.8
YANKEE ATOMIC ELEC COM	9.9	10.1	9.7	8.7	--	9.4	--	--	8.5	--	56.3
NOMINAL TOTAL	400.0	600.0	900.0	900.0	900.0	900.0	900.0	900.0	900.0	900.0	8200.0

^a All allocations have been adjusted from the 1992 ACR to reflect the change in the degree of precision.
^b These totals are not the sum of the annual allocations because the actual annual values are much less than .1 MTU.

EXHIBIT 2

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SERIES: The Leftovers Of the Nuclear Age. Second in a series

HEADLINE: THE LEFTOVERS OF THE NUCLEAR AGE / WANTED: SAFE SPOT FOR NUCLEAR WASTE
/ \$3B LATER, NEV. SITE IS STILL IN QUESTION

BYLINE: By Earl Lane. WASHINGTON BUREAU

DATELINE: Yucca Mountain, Nevada

BODY:

Yucca Mountain, Nevada - This barren desert ridge about 100 miles northwest of Las Vegas is surrounded by some of the most forbidding territory in the world.

To the southwest is fabled Death Valley. To the east, the desert floor is pockmarked by manmade craters and laced with radioactive debris created during 825 underground and 100 atmospheric nuclear test explosions.

Yucca Mountain would seem a good candidate for the last resting place for some of the nation's most dangerous nuclear waste. For some, there is an appealing symmetry to burying the spent fuel from the nation's commercial nuclear program in the same remote territory that helped give birth to the Atomic Age.

But despite the expenditure of nearly \$3 billion and two decades of investigation, federal officials still cannot say for sure whether it would be safe to put the spent reactor fuel - as well as some radioactive waste from military operations - in a hole some 1,000 feet below the crest of Yucca Mountain.

There is a hum of activity at the site and an intimation of progress. Huge ventilation fans whine at the north portal to the five-mile, U-shaped tunnel that has been dug through the heart of the mountain. Work crews and researchers shuttle in and out of the facility on small rail cars, heading for cave-like alcoves where experimental equipment has been arrayed to study the underground environment in detail.

Outside, dozens of boreholes have been sunk into the mountain and its nearby landscape. A U.S. Geological Survey team lowers sensors into a deep shaft from the crest of the 4,960-foot mountain to determine its "pneumatic" behavior - or how the mountain breathes gases in and out of its fissures according to changes



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in atmospheric pressure.

Probably no other patch of land on Earth has received more scientific attention during the past decade. The "site characterization" process has involved hundreds of scientists - geologists, hydrologists, seismologists, vulcanologists. Lake Barrett, acting director of the Department of Energy's office for civilian radioactive waste, estimates the scientific analyses of Yucca Mountain now are approaching 1 million pages.

And yet fundamental questions, particularly about the amount of water infiltration and its flow rates through the mountain, remain unanswered even as federal officials promise to deliver a viability decision on the repository site by late next year. A final recommendation on the site's suitability would come three years later.

Project officials cite the recently completed tunnel as a milestone toward resolving Yucca Mountain's future. Some critics see it as but a metaphor for the money pit of unfulfilled dreams in a nuclear waste disposal program that has been marked by cost overruns, schedule delays, changing criteria, management problems, scientific controversy and political opposition.

"The nuclear establishment is harvesting the fruits of years of incompetence and mendacity," said Dean Abrahamson, a public-policy specialist at the University of Minnesota who also spent 20 years in the nuclear industry.

When commercial reactors were being built in the 1960s, he said, federal officials "treated waste as if it were a non-problem." The attitude, Abrahamson said, was "when we get enough of it, we'll dig a hole someplace and bury it."

Now, in the twilight of the 20th Century, that has proved to be much easier said than done. Daniel Dreyfus, Barrett's predecessor at the Energy Department, said the Yucca Mountain project was unfocused when he took over in late 1993. "The scientific approach to the thing was to collect a lot of data and not to design a facility," Dreyfus said. There was little sense of closure and "in trying to get a composite plan together, there were great big pieces of it nobody got around to." He cited the lack of studies on how close the fuel canisters should be spaced in the tunnels and what heat output would be acceptable.

Barrett is confident there will be enough data by 2001 to decide whether to proceed with a formal application to the Nuclear Regulatory Commission to build the repository. He declines to lay odds, although Sen. Frank Murkowski (R-Alaska), chairman of the Senate Committee on Energy and Natural Resources, says department officials tell him privately that they think there is an 80 percent chance the mountain will prove suitable as a burial site.

If it is not, analysts say, there are no alternatives on the horizon. And given the history of the Yucca Mountain project, few are willing to predict when or if it will be completed. The proposed opening of the repository already has been set back twice - first from 1998 (the deadline set by law) to 2003; and then to 2010. Energy Department officials have talked about 2015 as a more realistic target.

Such uncertainty has helped drive the nuclear industry's campaign on Capitol



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Hill for an interim storage site - essentially a parking lot for casks filled with spent fuel - on several dozen acres of desert adjacent to Yucca Mountain. More than 30,000 tons of spent fuel has accumulated at commercial power reactors nationwide, and industry officials say they are running out of space to keep it. But the Clinton administration opposes any effort to mandate such a storage facility until it is clear the mountain will be the ultimate burial site for the waste.

Determination of that suitability has been a fitful process with changing financial resources and technical criteria. In 1981, according to one account, federal officials had estimated that repository site studies could be done for \$60 million to \$80 million. By 1987, the estimate was \$2 billion each for three sites - and Congress stepped in to declare Yucca Mountain the sole candidate.

By 1992, the Energy Department was projecting it would cost \$6.3 billion to study Yucca Mountain and prepare a license application. Congress balked, cutting annual appropriations and forcing a reorganization of the project and a loss of 1,075 contractor jobs.

The result has been a leaner effort, Energy Department officials said, which is aimed at coming to closure on some key scientific issues. They include:

- Earthquakes: The Yucca Mountain site is on or near 33 active faults, including one - the Ghost Dance fault - that intersects the repository level deep underground. The Nevada Agency for Nuclear Projects - a state office that monitors the Yucca Mountain project - reviewed earthquake data for southern Nevada and found that since 1976 there have been 621 seismic events of greater than 2.5 magnitude within 50 miles of Yucca Mountain. Most notable was a 5.6-magnitude earthquake near Little Skull Mountain - eight miles southeast of Yucca - on June 29, 1992. That quake caused nearly \$1 million worth of damage to a Department of Energy field office at Yucca Mountain.

Energy Department officials say - and scientists generally agree - that earthquakes pose less hazard to underground structures than they do to surface facilities because of the way shock waves travel through soils versus solid rock. In any event, the agency says, the repository site has been stable for the past million years (evidence suggests the last major disturbance of the Ghost Dance fault occurred 11 million to 12 million years ago). A 1995 National Research Council report found the regional geology is expected to remain relatively stable for about 1 million years.

- Volcanoes: Yucca Mountain was formed millions of years ago by volcanic eruptions that produced layers of ash that eventually condensed into a very hard, dense form of rock called tuff. The explosive-type volcano that formed Yucca is extinct, but there remain seven small, dormant volcanoes in the area that are under study. Two of the cones are 12 to 27 miles away and may have been active within the past 100,000 years. A panel of scientists estimated last year that the possibility of an eruption through the repository in the next 10,000 years is about 1 in 10,000.

- Geology and water flow: Probably the biggest question mark at Yucca Mountain remains the amount and flow of water in and near the repository site. Although it is an arid region - with an average of about 6.6 inches of rainfall a year - some water infiltrates the mountain, and a climate change could bring



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more.

Deep within the mountain, researchers have found unexpected traces of radioactive chlorine-36 produced during the atmospheric bomb tests. They conclude that the material, carried along by water infiltration, traveled nearly 1,000 feet into the mountain fairly rapidly during the half-century since the beginning of the bomb testing. This raises the question of whether there are "fast pathways" for carrying moisture through cracks and fissures in the mountain to the repository level. Over time, such moisture would cause the fuel containers to corrode. As their contents are released, the seeping water could transport radioactive material into the rock and eventually to the underlying ground water table.

Researchers also have found pockets of trapped water in the mountain. Although the pockets are below the proposed repository level, scientists say it is important to understand how they formed and whether any similar pockets could be breached during excavation of repository tunnels.

"We have found very little liquid water in the mountain," says geologist John Peck.

In theory, the containers of spent fuel will produce enough heat to drive off any nearby moisture. Still, as the fuel containers - and the surrounding rock - cool over time, any water vapor present could condense out as liquid water that could corrode the containers.

Project scientists plan several tests to see just how the rock behaves when it is heated. One small-scale heating test is now under way in an alcove off the main Yucca Mountain tunnel. A larger test is scheduled to begin in several years, too late to provide any data for the "viability assessment" due next year.

The Nuclear Waste Technical Review Board, a peer-review group that reports to Congress and the Energy Department, and the Lawrence Livermore National Laboratory in California have raised questions about whether the agency is doing large heating tests for long enough times. The Livermore researchers have argued that it would take a minimum of six years of heating to provide an adequate look at the rock behavior. The large-scale test now is planned for four years.

Project officials have been studying further steps - in addition to the packaging of the spent-fuel assemblies in double-walled metal canisters - to keep water away from the waste for a longer time. These can include additional fillers in the casks, drip shields above the canisters to deflect water, drains in the storage tunnels, backfilling the repository to slow or divert water flow and even use of additives on the tunnel floors to react with any waste that does escape the casks.

Even as some key members of Congress have pushed for a prompt decision at Yucca Mountain, the congressional General Accounting Office reported earlier this year that budget-cutting and the resulting constriction of scientific activity on the project could mean more delays.

GAO had pointed out in May, 1993, that the underlying reason for the slow progress and escalating costs at Yucca Mountain had been the Energy Department's



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top-heavy management and support structure on the project. Less than half of the money was being spent on scientific and technical investigations at the mountain.

Energy Department officials say that has changed, with a sharper focus now on ways to contain and isolate the waste within a repository.

To complicate matters, the agency is trying to determine whether Yucca Mountain is a safe location for a waste repository as the regulatory standards by which the site will be judged are changing.

The Nuclear Regulatory Commission's licensing standards must be consistent with radiation health standards of the Environmental Protection Agency. But EPA is just beginning the process of issuing its health standards for Yucca Mountain site. And those standards are expected to reflect a different - and more controversial - approach than the agency took originally in setting standards for nuclear waste repositories.

Previously, the standard emphasized limiting cumulative releases of radioactive materials - and their concentrations in air, water and soil - over a 10,000-year time frame. The new approach, recommended by an advisory panel convened by the National Academy of Sciences, is expected to emphasize the level of risk for a "critical group" of people living near the repository rather than the absolute amount of radiation released.

That could mean acceptance of releases that do not directly threaten the health of nearby residents generally. But one member of the panel - Thomas Pigford of the University of California at Berkeley - argued strongly that the critical group should be narrowly defined as the so-called subsistence farmers who draw water from wells near the waste dump, grow most of their own food and live at the time of maximum radiation releases. While such farmers may be few and far between, protecting them would be a conservative approach that avoids what Pigford said would be "an unjustified and unprecedented leniency in public health protection from radioactive waste."

Larry Weinstock, acting director of the EPA's Office of Radiation and Indoor Air, said the agency is likely to issue its Yucca Mountain standards in the fall. "You don't have to go all the way to the subsistence farmer to come up with something that is reasonable," Weinstock said. He said the agency is going to define an area around Yucca Mountain and the population of concern. He said EPA also probably will "set some maximum level of dose or contamination of groundwater that could exist outside of a certain region."

Nevada officials say pending legislation in Congress - which the White House said it will veto - would pre-empt the EPA by setting an average annual exposure limit of 100 millirems for the repository. State officials consider that limit - equal to one-third of the natural radiation we receive annually from background sources such as cosmic rays - to be too high.

As a practical matter, project scientists say it is highly unlikely any person will be exposed to whatever maximum the EPA comes up with. A 1995 computer analysis concluded that during the first 10,000 years after burial, the peak radiation releases to exposed individuals would be only 0.8 millirems per year - far below the annual background exposure of 300 millirems. Even under the worst-case assumptions, the radiation doses to the maximally exposed individuals



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Newsday, August 4, 1997

would be about 40 millirems per year.

But Pigford says it is the potential radiation exposures over the longer haul - say after 100,000 years - that could be more serious. It is then, after a slow buildup of contamination in the ground water over hundreds of millenia, that some people who use the water could receive radiation doses much higher than those predicted for the first 10,000 years, Pigford says.

In the end, Energy Department officials say, it is unreasonable to expect that all the technical answers will be available before Uncle Sam decides whether to go ahead with the repository. Some of the information - on the performance of the waste canisters over time, for example - can only be gathered and analyzed once the repository is built and loaded. The design of the repository (which also continues to evolve) will allow the Energy Department to retrieve the waste canisters for a period of time - probably about 70 years - during which performance of the repository can be carefully monitored.

"We're not trying to prove Yucca Mountain is the best site," says Theodore Garrish, a vice president of the Nuclear Energy Institute, the industry's policy organization. "We are trying to prove it is a good site . . . engineering and good science can make this site work." He predicted that if Yucca Mountain ultimately is deemed unsuitable, "it'll be years and years before the country comes to a solution" for the nuclear waste dilemma.

Arjun Makhijani, a physicist at the nonprofit Institute for Energy and Environmental Research, said his organization would like to see an independent agency manage any spent-fuel repository. "The Department of Energy does not have a good record of managing its own wastes" at nuclear weapons facilities, Makhijani said.

Some analysts have argued that the spent fuel should be left in temporary storage at reactor sites not only until questions at Yucca Mountain are resolved but also until social acceptance of the project is higher.

Federal officials see that as a recipe for further inaction.

Barrett said: "Those who call for no solution as the best solution and just let's think about it for a decade or two are repeating the mistakes of the early 1950s," when tough decisions on how to manage spent fuel were left for another day. Plan for Nuclear Waste The U.S. government is investigating a site at Yucca Mountain, Nev., to be the repository for the nation's nuclear waste. Site studies currently are going on there and the repository could be operational in about 15-20 years. Here is a look at how nuclear waste might be stored at the planned facility: Preparing the Waste How the waste is prepared at the waste handling building for storage in the repository. 1. The cask used for transporting the waste to Nevada is removed from its carrier. 2. The cask is then opened and the nuclear wastes is moved to a staging rack. The waste is then loaded into a storage container. 3. The lids are welded onto the disposal containers. The containers' outer lids will take as much as 33 hours to weld on. 4. The sealed container is placed on a rail car and pushed up to a transporter. A remote-controlled mechanism in the transporter pulls the container and the rail car inside. The Process 1. Canisters of nuclear waste, sealed in special casks, are shipped to the site by truck or train and are initially stopped at security station. 2. Casks are cleared to the carrier staging shed, where they



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are inspected for external contamination. 3. Casks then are sent to the waste handling building, where the waste is removed from the casks and placed in special containers that will be stored in the mountain. 4. Storage containers are placed into transporters. A locomotive attaches itself to the transporter and pulls it from the building, through the north portal, down the north ramp and to its destination at one of the emplacement blocks. 5. Containers are pushed into one of the tunnels in an emplacement block, where it will be periodically checked by sensors and robots. Tunnel Travel How the storage containers are deposited in the emplacement drifts. 1. The transporters carrying the nuclear waste are pulled through the portals and ramps by locomotives. 2. Once the transporter reaches an emplacement drift, it pushes the storage container out onto a loading dock. 3. A transfer locomotive then backs up an emplacement locomotive to the loading dock. 4. Emplacement locomotive pushes storage container to its position in the emplacement block. Types of Waste The Nevada site is being designed to handle three types of nuclear waste: Fuel assemblies from boiling-water reactor power plants Fuel assemblies from pressurized water reactor power plants Four canisters filled with a mixture of glass and waste from defense-related programs.

SOURCE: Department of Energy; Nuclear Regulatory Commission

GRAPHIC: Newsday Illustrated Color Chart by Steve Madden-Plan fo Nuclear Waste: Here is a look at how nuclear waste might be stored at the planned facility Source: Department of Energy; Nuclear Regulatory Commission. (SEE END OF TEXT; ILLUSTRATIONS NOT IN TEXT DATABASE). Color Photos by Ken Korotkin- 1) Above, possible site for a temporary waste repository near the 2) permanent facility proposed at Yucca Mountain, Nev., below.

LANGUAGE: English

LOAD-DATE: August 4, 1997



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EXHIBIT 3

3RD STORY of Focus printed in FULL format.

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August 3, 1997, Sunday, ALL EDITIONS

SECTION: NEWS; Page A04

LENGTH: 3518 words

SERIES: THE LEFTOVERS OF THE NUCLEAR AGE. First in a series

HEADLINE: THE LEFTOVERS OF THE NUCLEAR AGE / THE ERA AFTER / AT NUCLEAR PLANTS
NATIONWIDE, TONS OF WASTE PILE UP AMID A POLITICAL, SCIENTIFIC DEBATE

BYLINE: By Earl Lane. WASHINGTON BUREAU

DATELINE: Limerick, Pa.

BODY:

Limerick, Pa. - Nestled in racks at the bottom of a 39-foot-deep pool of water, the used fuel from the Limerick nuclear reactor betrays only the slightest hint that it will remain deadly for 10,000 years or more.

The radioactive fuel gives off a faint blue glow as high-energy particles it emits speed through the water.

The effect is eerily alluring - amplified by water so clean that it tricks the eye. Although 22 feet below the surface, the cross-like tops of the fuel bundles seem within reach.

Such bundles - nasty leftovers of the nuclear era - have been accumulating in storage pools at 109 commercial power reactors across the country and at 10 closed reactors. More than 34,000 tons await disposal, an amount that grows by about 2,000 tons a year.

The fuel is called "spent," but that is a misnomer. It will retain its ominous residual activity for millennia. The final disposal of spent reactor fuel - an afterthought during the "Atoms for Peace" optimism at the birth of nuclear power - has become one of the great technical and political challenges of the modern era. It is the ultimate not-in-my-backyard dilemma.

The Environmental Protection Agency is charged with developing radiation protection standards for the ages - from identifying the population that might be at-risk from any radiation leaking from a waste repository to setting dose limits. Planners also must consider what could happen if someone were to inadvertently intrude into the dump centuries from now.

It is as if the ancient Egyptians had to do a risk assessment before burying King Tut, trying to determine the chances that his pyramid would ever be disturbed.



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Such forecasting aside, the nation's spent-fuel disposal program has been stymied, critics say, by false starts, escalating costs, management ineptitude, missed deadlines and nagging doubts about how quickly to put the deadly waste out of sight and out of mind.

The effort has been complicated recently by an all-out industry campaign to persuade Congress to approve a temporary holding facility for the waste adjacent to Nevada's Yucca Mountain, a step critics say is ill-timed and could jeopardize the effort to determine whether that barren ridge 100 miles northwest of Las Vegas is suitable as a permanent burial site for the commercial spent fuel as well as some wastes from military nuclear programs.

The temporary storage site would compete with the Yucca Mountain project for tight funds, they say, and - if built - would ease the pressure to build the permanent repository, now projected to open in 2010 at the earliest and cost at least \$33 billion (in 1994 dollars) through 2071. Under provisions of a House bill, the temporary storage facility would have an initial license period of 20 years, a second phase of up to 100 years - and renewable beyond that.

"I don't think they industry officials care about" a permanent repository, says Robert Loux of the state of Nevada's Nuclear Waste Projects Office. "They believe their only opportunity to get waste away from reactor sites is through interim storage."

Loux questions whether the temporary facility - essentially a parking lot for huge casks filled with reactor fuel assemblies - could be built, licensed and operating as quickly as the congressional legislation envisions. By a 65-34 vote in April, the Senate approved a plan to open the temporary storage site by 2003. On Thursday, a House subcommittee passed a similar bill with a 2002 opening for the storage site. The full House is expected to follow suit. But the White House promises a veto. The Clinton administration opposes any attempt to establish an interim storage site in Nevada until the viability of Yucca Mountain as a permanent burial site is established.

Backers of the interim facility say it will provide a measure of relief for utilities that have started to build expensive on-site storage facilities at nuclear reactors because the government has been unable to deliver on its legal obligation - affirmed last year by a U.S. appeals court - to start taking the waste off their hands by next January.

Utilities, state regulators and federal officials are due in court next month to discuss compensation or other legal remedies for the Energy Department's inability to take the waste. The department already has broached the possibility of reimbursing utilities - at taxpayer expense - for some of the cost of building new on-site storage facilities for used reactor fuel.

The battle over an interim storage facility in Nevada is but the latest chapter in the tangled and vexing history of nuclear waste policy in the United States.

Many experts remain confident that the nuclear waste dilemma - with its attendant questions about the safety of moving the spent fuel - - can be solved. "Most people in the field don't see any problems," said Peter Soo, a nuclear



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engineer at Brookhaven National Laboratory. "The solutions are at hand. We know how to do it."

But as Brookhaven's own public relations fiasco with a small tritium leak from its main research reactor has shown, the public anxiety about all things radioactive can make calm discussion about technical solutions for nuclear waste problems difficult.

Brookhaven also became an early lightning rod for opposition to spent-fuel transport in the mid-1970s when New York City objected to truck shipments of the lab's spent fuel on city streets. Although a court ruled in its favor, Brookhaven decided to ship the fuel off Long Island by barge instead.

The history of nuclear waste policy is littered with aggrieved parties, heated rhetoric and often shaky data on both sides. The industry lately has been pressing a sense of urgency, labeled dubious by critics, about reactors running out of storage space and facing shutdown (a contention that surfaced in Senate debates in the early 1980s as well). Anti-nuclear activists have warned that transport of spent fuel will create "mobile Chernobyls," potential catastrophes on wheels in ill-prepared communities, although there has never been a serious accident involving spent-fuel transport here or abroad. For years, the Energy Department promised that it would meet the congressionally mandated Jan. 31, 1998, deadline for accepting spent fuel from commercial reactors - even as it made little substantive progress toward that goal while spending nearly \$3 billion at Yucca Mountain alone.

The debate has been marked by what seems at times an unbridgeable gap between engineers who feel comfortable with the risks and benefits of nuclear power and a public that fears the specter of any radiation release, mistrusts the assurances of engineers and scientists and has felt misled in the past by inept management of government nuclear weapons plants and some commercial power reactors.

"On the whole, the industry has done a poor job of educating the public and establishing confidence with the public in their ability to deal with nuclear materials and nuclear waste," said Vincent Franceschi, president of Vectra Technologies, a vendor of storage casks for spent nuclear fuel. "The technologists have rebutted back with factual, technical arguments that don't carry much weight in an emotional discussion. It's a pretty steep uphill battle."

Rather than an impending crisis in fuel storage space, some social scientists say, the real crisis is the continuing lack of public confidence in nuclear technology.

"The civilian nuclear power program has grown out of the weapons program and the bomb," said Paul Slovic, president of Decision Research Inc. of Eugene, Ore. "The image of the bomb is in the back of virtually everyone's mind . . . If you ask people what a typical accident might entail at a nuclear plant, you get images that look like the aftermath of a nuclear bomb." Slovic's firm has done opinion research on nuclear issues for Nevada.

Given the adamant opposition of that state - and the likelihood of wider public concern once transportation of spent fuel begins nationally - Slovic and others say it makes more sense to leave the stuff where it is until attitudes



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change.

Marvin Resnikoff of Radioactive Waste Management Associates, a Manhattan-based consultant who has done contract work for Nevada, argues that storage at reactors is safer for now than mounting a large-scale movement of spent fuel to a single location.

"The longer the fuel sits and cools down, the safer it is to transport it," Resnikoff said. For now, he said, the spent fuel should be stored at reactors. "You make it, you take it," Resnikoff said.

There is little sympathy for that view in the U.S. nuclear industry, which sees few hopes of ever building another reactor - the last order in this country came in 1978 - unless the waste disposal dilemma is resolved.

Industry officials contend the Energy Department is dragging its feet. "We haven't got back anything but excuses," said Michael Morris, president of Consumers Energy Co., a nuclear utility in Jackson, Mich.

By getting spent fuel - at more than 70 reactor sites in 34 states - to Nevada as soon as possible, analysts say, the industry avoids having to store it indefinitely at reactors at a time when proposed utility restructuring already threatens to leave operators of unprofitable nuclear power plants with as much as \$70 billion in unrecoverable costs.

Nuclear industry officials counter that it is the taxpayers who might have to pay billions if Uncle Sam is required to reimburse for on-site storage costs and other economic impacts on utilities after failing to take title to the commercial spent fuel.

Moreover, they argue that reactors were never meant to become de facto fuel storage sites. Many are situated on waterways or in other environmentally sensitive locations. With increasing local opposition to on-site fuel storage, the industry says it could be caught in an untenable position: unable to ship the fuel to a central storage or disposal site and unable to keep piling it up at the reactors.

But is the situation as desperate as portrayed in some of the congressional debates?

Proponents of the interim storage facility - citing industry figures - have warned that 27 reactors will run out of space to house their spent fuel by next year, with dozens of others to follow during the next decade.

But those 27 reactors already has alternative arrangements for on-site storage of the fuel, according to reports the utilities filed with the federal government. Even industry officials acknowledge that no reactor is seriously threatened with shutdown in the near-term.

"You don't need to shut down reactors," said Morris of Consumers Energy Co. "This isn't a threat."

Morris said the industry has a legitimate gripe, however, about the lack of results 15 years after Congress ordered utilities to start collecting fees from



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ratepayers - now running about \$630 million a year - for a federally run disposal program that seems no closer than it did a decade ago.

"There needs to be some certainty in the planning process," said Theodore Garrish, vice president for nuclear waste at the industry's Nuclear Energy Institute.

That was what Congress had tried to do when it passed the 1982 Nuclear Waste Policy Act. It ordered the Department of Energy to start a rigorous, nationwide search for spent-fuel repository sites and to begin accepting spent fuel from utilities on Jan. 31, 1998, a target which some scientists say was unrealistic from the outset.

The act ordered the Energy Department to develop two high-level waste repositories, one in the West and one in the East, where most of the commercial reactors are situated. But the agency proposed some sites - such as the government's polluted Hanford reservation in Washington state - that even its own scientists warned were likely unacceptable. Plagued by unrealistic deadlines and local opposition to proposed sites, the selection process was in disarray by 1986.

Frustrated, Congress called off the search in 1987 and passed legislation designating Yucca Mountain - in politically weak Nevada - as the sole repository candidate.

A decade later, the suitability of Yucca Mountain as a permanent waste repository remains to be determined, with gaps in information about such basic questions as the water infiltration rates. A five-mile tunnel through the mountain was completed recently and will allow more extensive studies.

Recent discoveries suggest that rainwater may percolate into the mountain at least four times faster than previously estimated. Scientists also have found evidence suggesting that some water has been able to reach the repository horizon - about 1,000 feet underground - in 50 years or less.

Given time, moisture can attack even the sturdiest waste containers.

A viability assessment of the Yucca Mountain repository - essentially a decision on whether there are any showstoppers so far - is due late next year, with a final decision on its suitability due by 2001.

For backers of Yucca Mountain, the biggest nightmare is that it would prove unsuitable after billions spent and no other site jumps to the fore. "We don't have a contingency plan if we decide we are not going to make a commitment to a geologic repository," said Daniel Dreyfus, who formerly headed the Energy Department's Office of Civilian Radioactive Waste Management. Accordingly, he said, a barely hidden agenda on Capitol Hill is to approve the temporary storage facility, get the spent fuel to Nevada at all costs "and the hell with it."

Even if shipments of spent fuel to Nevada were to begin in a few years - whether to an interim storage site or a permanent repository - they would not necessarily bring quick relief to some locations where critics of on-site storage of reactor fuel have been vocal.



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The existing contracts between the Energy Department and the nuclear utilities call for the oldest fuel to be shipped first. Reactors that have been shut down recently for political or economic reasons - such as the Trojan reactor near Portland, Ore. - do not have the oldest fuel and could be stuck with on-site storage for up to 20 years in any event.

In fact, much of the spent fuel slated for initial transport lies not in storage pools at active reactor sites but at an existing storage facility at a commercial fuel-reprocessing facility in Morris, Ill., that never operated. Also slated for early removal is fuel still on-site at the defunct reprocessing facility at West Valley, near Buffalo.

The Nuclear Waste Technical Review Board, an independent panel of experts reporting to Congress and the Department of Energy, said last year that "developing a centralized storage facility at Yucca Mountain now would only reduce, but not eliminate, the need to continue adding spent fuel storage capacity at reactor sites." The board also concluded that there is "no compelling technical or safety reasons for moving spent fuel to a centralized storage facility for the next few years." It said "the methods now used to store spent fuel at reactor sites are safe and are likely to remain safe for decades to come."

The industry developed ways to squeeze more spent fuel into the existing storage ponds and built large storage casks that can be lowered into the cooling pools and filled remotely with used fuel assemblies. The casks are then raised, drained of water, sealed and placed on reinforced, fenced concrete storage pads near the reactor for indefinite storage.

The federal Nuclear Regulatory Commission, which licenses the storage casks, has concluded that they can be safely used for as long as a century. There now are 10 on-site storage facilities in the United States, and another dozen being planned. The first such at-reactor facility, at the Surry Power Station in southeast Virginia, now has 31 filled casks and slots for as many as 84 - enough to store all of the spent fuel from the two Surry reactors when their operating licenses expire in 2012 and 2013.

While industry officials agree such dry cask storage facilities are safe, they argue it would be more efficient - and cheaper - to manage and secure the spent fuel at one central location rather than dozens of reactor sites, especially with some communities now starting to object to construction of new on-site storage facilities.

The Nuclear Energy Institute, the industry lobbying group, estimates that as many as 55 nuclear sites may require at-reactor storage facilities by 2010 - when the permanent repository is supposed to start accepting spent fuel. The cost of building and operating those facilities through 2010 is projected to be at least \$4.3 billion, according to Theodore J. Garrish, the institute's vice president for nuclear waste management.

Auke Piersma, an analyst for Public Citizen - a nonprofit group that has been critical of the nuclear industry - challenges those estimates. Using Department of Energy data and different criteria for the amount of reserve space required in the spent fuel pools, Piersma projects that 32 sites will need added storage by 2010. He puts the cost at \$665 million.

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The Congressional Budget Office has estimated the central storage facility being discussed in Congress would cost \$2.3 billion over five years, with \$1.4 billion of that devoted to transporting the spent fuel to Nevada from sites around the country.

Transportation is another sore point for opponents of the centralized facility. Some state and local officials worry about the potential for more frequent accidents if the number of spent-fuel shipments increases dramatically. There have been estimates that it would take as many as 17,000 rail and highway shipments over several decades to move the spent fuel to Nevada.

Specialists say there has never been a serious accident during the more than 2,400 shipments of spent nuclear fuel in the United States over the years. While commercial spent fuel has been piling up at reactors, used fuel from smaller research reactors is shipped regularly to a Department of Energy storage site near Aiken, S.C.

"Spent reactor fuel has moved around this country for years," said Susan Shankman, a specialist on nuclear fuel transportation and safety at the Nuclear Regulatory Commission. "Research reactor fuel moves almost weekly, and safely."

Critics also contend that certification of the shipping casks is done largely through computer simulation of accident scenarios and subscale tests of cask models. Whether those tests adequately predict the behavior of the casks under real world conditions such as a catastrophic highway tunnel fire remains a point of contention.

Daniel Dreyfus, who formerly headed the Energy Department's commercial radioactive waste program, sees the current argument over an interim storage site as a "sideshow" to the more pressing question of whether Yucca Mountain will be deemed suitable as a burial site for the waste. "We've bet the farm on one site geologically," Dreyfus said. "We're unlikely to ever look at another site if it doesn't work," he said.

Dreyfus, who also worked on Capitol Hill for many years, said "the politicians got suckered" in the early 1980s when they approved a nuclear waste disposal program that has proved to be far more costly, complex and difficult to sell than they had imagined. There was talk at the time of building a repository for a total of \$800 million, Dreyfus said.

D. Warner North, a senior vice president of Decision Focus Inc., a consulting firm in Mountain View, Calif., argues that social sciences are now proving as necessary as Earth sciences and engineering in setting policy on nuclear waste. "We should ask the social scientists for their help in communicating with the public about nuclear waste," North wrote recently in *Physics Today*.

Proponents of a centralized storage facility say their message is simple enough. "It's in the best interest of the communities locally that the spent fuel not be kept there indefinitely," said Eileen Supko of Energy Resources International, a consulting firm that has done work for the nuclear industry. "It makes no sense to store the fuel for 50 or 100 years. It's a waste of resources. We could be spending that money on renewables, clean coal technology, the next generation of nuclear plants, whatever."



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Dreyfus, now associate director for operations at the National Museum of Natural History, agrees that the spent fuel should not be left at reactor sites indefinitely.

"The basic truth is that someday it's got to move," Dreyfus said. But he adds, "I can't find any reason to leap forward and do it instantly." How Waste Occurs 1. Nuclear reactors are powered by enriched uranium-235 fuel. This fuel is in the form of bullet-sized pellets loaded into long rods. The fuel turns the coolant into steam, which turns the turbines that make electricity. 2. About 200 rods are packed into fuel assemblies. After about six years, the spent fuel assemblies are removed and placed in storage pools to cool. Here they remain unless they are removed to dry storage.

GRAPHIC: Newsday illustrated chart by Steve Madden - How Waste Is Created. Source: Department of Energy. Nuclear Regulatory Commission. (SEE END OF TEXT; ILLUSTRATIONS NOT IN TEXT DATABASE). 1) Color cover photo by Dan Z. Johnson - Engineer Matthew Eyre at spent-fuel cooling pool at Limerick, Pa., power plant. 2) Color photo by Ken Korotkin- View inside the Yucca Mountain project tunnel, where nuclear waste would be stored if the U.S. government approves the Nevada site as a permanent repository for radioactive materials. 3) Color photo by Dan Z. Johnson- A pool of water cools used radioactive fuel from a nuclear reactor⁴ in Limerick, Pa. 4) Photo by Dan Z. Johnson A sign in the spent-fuel pool area warns workers at the Limerick, Pa., nuclear reactor.

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EXHIBIT 4

7TH REFERENCE of Level 1 printed in FULL format.

FULL TEXT OF BILLS

105TH CONGRESS; 1ST SESSION
IN THE SENATE OF THE UNITED STATES
PUBLIC PRINT - Includes amendments incorporated

S. 104

1997 S. 104; 105 S. 104

<=A1> Retrieve Bill Tracking Report

SYNOPSIS:

AN ACT To amend the Nuclear Waste Policy Act of 1982.

DATE OF INTRODUCTION: JANUARY 21, 1997

DATE OF VERSION: MAY 7, 1997 -- VERSION: 4

SPONSOR(S):

Sponsor not included in this printed version.

TEXT:

* Be it enacted by the Senate and House of Representatives of the United*
*States of America in Congress assembled, *That the Nuclear Waste Policy
Act of 1982 is amended to read as follows:

"SECTION 1. SHORT TITLE AND TABLE OF CONTENTS.

"(a) SHORT TITLE.-THIS ACT MAY BE CITED AS THE 'NUCLEAR WASTE POLICY
ACT OF 1997'.

"(B) TABLE OF CONTENTS.-

"Sec. 1. Short title and table of contents.

"Sec. 2. Definitions.

"TITLE I-OBLIGATIONS

"Sec. 101. Obligations of the Secretary of Energy.

"TITLE II-INTEGRATED MANAGEMENT SYSTEM

"Sec. 201. Intermodal transfer.

"Sec. 202. Transportation planning.

"Sec. 203. Transportation requirements.

"Sec. 204. Viability assessment and Presidential determination

"Sec. 205. Interim storage facility.

"Sec. 206. Permanent repository.

"Sec. 207. Compliance with the National Environmental Policy Act.

"Sec. 208. Land withdrawal.

"TITLE III-LOCAL RELATIONS

"Sec. 301. Financial assistance.

"Sec. 302. On-Site Representative.

"Sec. 303. Acceptance of benefits.

"Sec. 304. Restrictions on use of funds.

"Sec. 305. Land conveyances.

"TITLE IV-FUNDING AND ORGANIZATION

"Sec. 401. Program funding.
 "Sec. 402. Office of Civilian Radioactive Waste Management.
 "Sec. 403. Federal contribution.
 "TITLE V-GENERAL AND MISCELLANEOUS PROVISIONS
 "Sec. 501. Compliance with other laws.
 "Sec. 502. Judicial review of agency actions.
 "Sec. 503. Licensing of facility expansions and transshipments.
 "Sec. 504. Siting a second repository.
 "Sec. 505. Financial arrangements for low-level radioactive waste site closure.
 "Sec. 506. Nuclear Regulatory Commission training authority.
 "Sec. 507. Emplacement schedule.
 "Sec. 508. Transfer of title.
 "Sec. 509. Decommissioning Pilot Program.
 "Sec. 510. Water rights.

 "TITLE VI-NUCLEAR WASTE TECHNICAL REVIEW BOARD

"Sec. 601. Definitions.
 "Sec. 602. Nuclear Waste Technical Review Board.
 "Sec. 603. Functions.
 "Sec. 604. Investigatory powers.
 "Sec. 605. Compensation of members.
 "Sec. 606. Staff.
 "Sec. 607. Support services.
 "Sec. 608. Report.
 "Sec. 609. Authorization of appropriations.
 "Sec. 610. Termination of the board.

 "TITLE VII-MANAGEMENT REFORM

"Sec. 701. Management reform initiatives.
 "Sec. 702. Reporting.

 "TITLE VIII-MISCELLANEOUS

"Sec. 801. Sense of the Senate.
 "Sec. 802. Effective date.
 "SEC. 2. DEFINITIONS.

 "For purposes of this Act:

 "(1) ACCEPT, ACCEPTANCE.-THE TERMS 'ACCEPT' AND 'ACCEPTANCE' MEAN THE SECRETARY'S ACT OF TAKING POSSESSION OF SPENT NUCLEAR FUEL OR HIGH-LEVEL RADIOACTIVE WASTE.

 "(2) AFFECTED INDIAN TRIBE.-THE TERM 'AFFECTED INDIAN TRIBE' MEANS ANY INDIAN TRIBE-

 "(A) WHOSE RESERVATION IS SURROUNDED BY OR BORDERS AN AFFECTED UNIT OF LOCAL GOVERNMENT, OR

 "(B) WHOSE FEDERALLY DEFINED POSSESSORY OR USAGE RIGHTS TO OTHER LANDS OUTSIDE OF THE RESERVATION'S BOUNDARIES ARISING OUT OF CONGRESSIONALLY RATIFIED TREATIES MAY BE SUBSTANTIALLY AND ADVERSELY AFFECTED BY THE LOCATING OF AN INTERIM STORAGE FACILITY OR A REPOSITORY IF THE SECRETARY OF THE INTERIOR FINDS, UPON THE PETITION OF THE APPROPRIATE GOVERNMENTAL OFFICIALS OF THE TRIBE, THAT SUCH EFFECTS ARE BOTH SUBSTANTIAL AND ADVERSE TO THE TRIBE.

 "(3) AFFECTED UNIT OF LOCAL GOVERNMENT.-THE TERM 'AFFECTED UNIT OF LOCAL GOVERNMENT' MEANS THE UNIT OF LOCAL GOVERNMENT WITH JURISDICTION OVER THE SITE OF A REPOSITORY OR INTERIM STORAGE FACILITY. SUCH TERM MAY, AT THE DISCRETION OF THE SECRETARY, INCLUDE OTHER UNITS OF LOCAL GOVERNMENT THAT ARE CONTIGUOUS WITH SUCH UNIT.

 "(4) ATOMIC ENERGY DEFENSE ACTIVITY.-THE TERM 'ATOMIC ENERGY

S. 104 MAY 7, 1997 -- VERSION: 4

" (3) A PLAN AND COST ESTIMATE FOR THE REMAINING WORK REQUIRED TO COMPLETE THE LICENSE APPLICATION UNDER SECTION 206 (C) OF THIS ACT, AND

" (4) AN ESTIMATE OF THE COSTS TO CONSTRUCT AND OPERATE THE REPOSITORY IN ACCORDANCE WITH THE PRELIMINARY DESIGN CONCEPT IN PARAGRAPH (1) OF THIS SUBSECTION.

" (B) PRESIDENTIAL DETERMINATION. -NO LATER THAN MARCH 1, 1999, THE PRESIDENT, IN HIS SOLE AND UNREVIEWABLE DISCRETION, MAY MAKE A DETERMINATION DISQUALIFYING THE YUCCA MOUNTAIN SITE AS A REPOSITORY, BASED ON THE PRESIDENT'S VIEWS THAT THE PREPONDERANCE OF INFORMATION AVAILABLE AT SUCH TIME INDICATES THAT THE YUCCA MOUNTAIN SITE IS NOT SUITABLE FOR DEVELOPMENT OF A REPOSITORY OF USEFUL SIZE. IF THE PRESIDENT MAKES A DETERMINATION UNDER THIS SUBSECTION-

" (1) THE SECRETARY SHALL CEASE ALL ACTIVITIES (EXCEPT NECESSARY TERMINATION ACTIVITIES) AT THE YUCCA MOUNTAIN SITE AND SECTION 206 OF THIS ACT SHALL CEASE TO BE IN EFFECT; AND

" (2) NO LATER THAN 6 MONTHS AFTER SUCH DETERMINATION, THE SECRETARY SHALL REPORT TO CONGRESS ON THE NEED FOR ADDITIONAL LEGISLATION RELATING TO THE PERMANENT DISPOSAL OF NUCLEAR WASTE.

" (C) PRELIMINARY SECRETARIAL DESIGNATION OF INTERIM STORAGE FACILITY SITES. -

" (1) IF THE PRESIDENT DOES NOT MAKE A DETERMINATION UNDER SUBSECTION (B) OF THIS SECTION, NO LATER THAN MARCH 31, 1999, THE SECRETARY SHALL MAKE A PRELIMINARY DESIGNATION OF A SPECIFIC SITE WITHIN AREA 25 OF THE NEVADA TEST SITE FOR PLANNING AND CONSTRUCTION OF AN INTERIM STORAGE FACILITY UNDER SECTION 205.

" (2) WITHIN 18 MONTHS OF A DETERMINATION BY THE PRESIDENT THAT THE YUCCA MOUNTAIN SITE IS UNSUITABLE FOR DEVELOPMENT AS A REPOSITORY UNDER SUBSECTION (B), THE PRESIDENT SHALL DESIGNATE A SITE FOR THE CONSTRUCTION OF AN INTERIM STORAGE FACILITY. THE PRESIDENT SHALL NOT DESIGNATE THE HANFORD NUCLEAR RESERVATION IN THE STATE OF WASHINGTON, AND THE SAVANNAH RIVER SITE AND BARNWELL COUNTY IN THE STATE OF SOUTH CAROLINA, OR THE OAK RIDGE RESERVATION IN THE STATE OF TENNESSEE, AS A SITE FOR CONSTRUCTION OF AN INTERIM STORAGE FACILITY. IF THE PRESIDENT DOES NOT DESIGNATE A SITE FOR THE CONSTRUCTION OF AN INTERIM STORAGE FACILITY, OR THE CONSTRUCTION OF AN INTERIM STORAGE FACILITY AT THE DESIGNATED SITE IS NOT APPROVED BY LAW WITHIN 24 MONTHS OF THE PRESIDENT'S DETERMINATION THAT THE YUCCA MOUNTAIN SITE IS NOT SUITABLE FOR DEVELOPMENT AS A REPOSITORY, THE INTERIM STORAGE FACILITY SITE AS DEFINED IN SECTION 2(19) OF THIS ACT IS DESIGNATED AS THE INTERIM STORAGE FACILITY SITE FOR PURPOSES OF SECTION 205. THE INTERIM STORAGE FACILITY SITE SHALL BE DEEMED TO BE APPROVED BY LAW FOR PURPOSES OF THIS PARAGRAPH.

"SEC. 205. INTERIM STORAGE FACILITY.

" (a) NON-SITE-SPECIFIC ACTIVITIES. -AS SOON AS PRACTICABLE AFTER THE DATE OF ENACTMENT OF THE NUCLEAR WASTE POLICY ACT OF 1997, THE SECRETARY SHALL SUBMIT TO THE COMMISSION A TOPICAL SAFETY ANALYSIS REPORT CONTAINING A GENERIC DESIGN FOR AN INTERIM STORAGE FACILITY. IF THE SECRETARY HAS SUBMITTED SUCH A REPORT PRIOR TO SUCH DATE OF ENACTMENT, THE REPORT SHALL BE DEEMED TO HAVE SATISFIED THE REQUIREMENT IN THE PRECEDING SENTENCE. NO LATER THAN DECEMBER 31, 1998, THE COMMISSION SHALL ISSUE A SAFETY EVALUATION REPORT APPROVING OR DISAPPROVING THE GENERIC DESIGN SUBMITTED BY THE SECRETARY.

" (B) SITE-SPECIFIC AUTHORIZATION. -THE SECRETARY SHALL DESIGN,

CONSTRUCT, AND OPERATE A FACILITY FOR THE INTERIM STORAGE OF SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE AT THE INTERIM STORAGE FACILITY SITE DESIGNATED UNDER SECTION 204 AND LICENSED BY THE COMMISSION UNDER THIS SECTION. THE COMMISSION SHALL LICENSE THE INTERIM STORAGE FACILITY IN ACCORDANCE WITH THE COMMISSION'S REGULATIONS GOVERNING THE LICENSING OF INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE (10 CFR PART 72). SUCH REGULATIONS SHALL BE AMENDED BY THE COMMISSION AS NECESSARY TO IMPLEMENT THE PROVISIONS OF THIS ACT. THE COMMISSION MAY AMEND PART 72 OF TITLE 10, CODE OF FEDERAL REGULATIONS WITH REGARD TO FACILITIES NOT COVERED BY THIS ACT AS DEEMED APPROPRIATE BY THE COMMISSION.

"(C) LIMITATIONS AND CONDITIONS.-

"(1) THE SECRETARY SHALL NOT COMMENCE CONSTRUCTION OF AN INTERIM STORAGE FACILITY (WHICH SHALL MEAN TAKING ACTIONS WITHIN THE MEANING OF THE TERM 'COMMENCEMENT OF CONSTRUCTION' CONTAINED IN THE COMMISSION'S REGULATIONS IN SECTION 72.3 OF TITLE 10, CODE OF FEDERAL REGULATIONS) BEFORE THE COMMISSION, OR AN APPROPRIATE OFFICER OR BOARD OF THE COMMISSION, MAKES THE FINDING UNDER SECTION 72.40(B) OF TITLE 10, CODE OF FEDERAL REGULATIONS.

"(2) AFTER THE SECRETARY MAKES THE PRELIMINARY DESIGNATION OF AN INTERIM STORAGE SITE UNDER SECTION 204, THE SECRETARY MAY COMMENCE SITE DATA ACQUISITION ACTIVITIES AND DESIGN ACTIVITIES NECESSARY TO COMPLETE LICENSE APPLICATION AND ENVIRONMENTAL REPORT UNDER SUBSECTION (D) OF THIS SECTION.

"(3) NOTWITHSTANDING ANY OTHER APPLICABLE LICENSING REQUIREMENT, THE SECRETARY MAY UTILIZE FACILITIES OWNED BY THE FEDERAL GOVERNMENT ON THE DATE OF ENACTMENT OF THE NUCLEAR WASTE POLICY ACT OF 1997 AND LOCATED WITHIN THE BOUNDARIES OF THE INTERIM STORAGE SITE, IN CONNECTION WITH ADDRESSING ANY IMMINENT AND SUBSTANTIAL ENDANGERMENT TO PUBLIC HEALTH AND SAFETY AT THE INTERIM STORAGE FACILITY SITE, PRIOR TO RECEIVING A LICENSE FROM THE COMMISSION FOR THE INTERIM STORAGE FACILITY, FOR PURPOSES OF FULFILLING REQUIREMENTS FOR RETRIEVABILITY DURING THE FIRST FIVE YEARS OF OPERATION OF THE INTERIM STORAGE FACILITY.

"(D) LICENSE APPLICATION.-NO LATER THAN 30 DAYS AFTER THE DATE ON WHICH THE SECRETARY MAKES A PRELIMINARY DESIGNATION OF AN INTERIM STORAGE FACILITY SITE UNDER SECTION 204, THE SECRETARY SHALL SUBMIT A LICENSE APPLICATION AND AN ENVIRONMENTAL REPORT IN ACCORDANCE WITH APPLICABLE REGULATIONS (SUBPART B OF PART 72 OF TITLE 10, CODE OF FEDERAL REGULATIONS, AND SUBPART A OF PART 51 OF TITLE 10, CODE OF FEDERAL REGULATIONS, RESPECTIVELY). THE LICENSE APPLICATION-

"(1) SHALL BE FOR A TERM OF 40 YEARS; AND

"(2) SHALL BE FOR A QUANTITY OF SPENT NUCLEAR FUEL OR HIGH-LEVEL RADIOACTIVE WASTE EQUAL TO THE QUANTITY THAT WOULD BE EMPLACED UNDER SECTION 507 PRIOR TO THE DATE THAT THE SECRETARY ESTIMATES, IN THE LICENSE APPLICATION, TO BE THE DATE ON WHICH THE SECRETARY WILL RECEIVE AND STORE SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE AT THE PERMANENT REPOSITORY.

"(E) DESIGN.-

"(1) THE DESIGN FOR THE INTERIM STORAGE FACILITY SHALL PROVIDE FOR THE USE OF STORAGE TECHNOLOGIES WHICH ARE LICENSED, APPROVED, OR CERTIFIED BY THE COMMISSION, TO ENSURE COMPATIBILITY BETWEEN THE INTERIM STORAGE FACILITY AND CONTRACT HOLDERS' SPENT NUCLEAR FUEL AND FACILITIES, AND TO FACILITATE THE SECRETARY'S ABILITY TO MEET THE

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SECRETARY'S OBLIGATIONS UNDER THIS ACT.

"(2) THE SECRETARY SHALL CONSENT TO AN AMENDMENT TO THE CONTRACTS TO PROVIDE FOR REIMBURSEMENT TO CONTRACT HOLDERS FOR TRANSPORTABLE STORAGE SYSTEMS PURCHASED BY CONTRACT HOLDERS IF THE SECRETARY DETERMINES THAT IT IS COST EFFECTIVE TO USE SUCH TRANSPORTABLE STORAGE SYSTEMS AS PART OF THE INTEGRATED MANAGEMENT SYSTEM: *

* *Provided,* That the Secretary shall not be required to expend any funds to modify contract holders' storage or transport systems or to seek additional regulatory approvals in order to use such systems.

"(f) LICENSE AMENDMENTS.-

"(1) THE SECRETARY MAY SEEK SUCH AMENDMENTS TO THE LICENSE FOR THE INTERIM STORAGE FACILITY AS THE SECRETARY MAY DEEM APPROPRIATE, INCLUDING AMENDMENTS TO USE NEW STORAGE TECHNOLOGIES LICENSED BY THE COMMISSION OR TO RESPOND TO CHANGES IN COMMISSION REGULATIONS.

"(2) AFTER RECEIVING A LICENSE FROM THE COMMISSION TO RECEIVE AND STORE SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE IN THE PERMANENT REPOSITORY, THE SECRETARY SHALL SEEK SUCH AMENDMENTS TO THE LICENSE FOR THE INTERIM STORAGE FACILITY AS WILL PERMIT THE OPTIMAL USE OF SUCH FACILITY AS AN INTEGRAL PART OF A SINGLE SYSTEM WITH THE REPOSITORY.

"(G) COMMISSION ACTIONS.-

"(1) THE ISSUANCE OF A LICENSE TO CONSTRUCT AND OPERATE AN INTERIM STORAGE FACILITY SHALL BE CONSIDERED A MAJOR FEDERAL ACTION SIGNIFICANTLY AFFECTING THE QUALITY OF THE HUMAN ENVIRONMENT FOR PURPOSES OF THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (42 U.S.C. 4321 ET SEQ.). PRIOR TO ISSUING A LICENSE UNDER THIS SECTION, THE COMMISSION SHALL PREPARE A FINAL ENVIRONMENTAL IMPACT STATEMENT IN ACCORDANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969, THE COMMISSION'S REGULATIONS, AND SECTION 207 OF THIS ACT. THE COMMISSION SHALL ENSURE THAT THIS ENVIRONMENTAL IMPACT STATEMENT IS CONSISTENT WITH THE SCOPE OF THE LICENSING ACTION AND SHALL ANALYZE THE IMPACTS OF TRANSPORTATION OF SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE TO THE INTERIM STORAGE FACILITY IN A GENERIC MANNER.

"(2) THE COMMISSION SHALL ISSUE A FINAL DECISION GRANTING OR DENYING A LICENSE FOR AN INTERIM STORAGE FACILITY NOT LATER THAN 32 MONTHS AFTER THE DATE OF SUBMITTAL OF THE APPLICATION FOR SUCH LICENSE.

"(3) NO LATER THAN 32 MONTHS FOLLOWING THE DATE OF ENACTMENT OF THE NUCLEAR WASTE POLICY ACT OF 1997, THE COMMISSION SHALL MAKE ANY AMENDMENTS NECESSARY TO THE DEFINITION OF 'SPENT NUCLEAR FUEL' IN SECTION 72.4 OF TITLE 10, CODE OF FEDERAL REGULATIONS, TO ALLOW AN INTERIM STORAGE FACILITY TO ACCEPT (SUBJECT TO SUCH CONDITIONS AS THE COMMISSION MAY REQUIRE IN A SUBSEQUENT LICENSE)-

"(A) SPENT NUCLEAR FUEL FROM RESEARCH REACTORS;

"(B) SPENT NUCLEAR FUEL FROM NAVAL REACTORS;

"(C) HIGH-LEVEL RADIOACTIVE WASTE OF DOMESTIC ORIGIN FROM CIVILIAN NUCLEAR REACTORS THAT HAVE PERMANENTLY CEASED OPERATION BEFORE SUCH DATE OF ENACTMENT; AND

"(D) SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE FROM ATOMIC ENERGY DEFENSE ACTIVITIES.

FOLLOWING ANY SUCH AMENDMENTS, THE SECRETARY SHALL SEEK AUTHORITY, AS NECESSARY, TO STORE SUCH FUEL AND WASTE AT THE INTERIM STORAGE FACILITY. NONE OF THE ACTIVITIES CARRIED OUT PURSUANT TO THIS

PARAGRAPH SHALL DELAY, OR OTHERWISE AFFECT, THE DEVELOPMENT, LICENSING, CONSTRUCTION, OR OPERATION OF THE INTERIM STORAGE FACILITY.

"SEC. 206. PERMANENT REPOSITORY.

"(a) REPOSITORY CHARACTERIZATION.-

"(1) CHARACTERIZATION OF THE YUCCA MOUNTAIN SITE.-THE SECRETARY SHALL CARRY OUT SITE CHARACTERIZATION ACTIVITIES AT THE YUCCA MOUNTAIN SITE IN ACCORDANCE WITH THE SECRETARY'S PROGRAM APPROACH TO SITE CHARACTERIZATION. SUCH ACTIVITIES SHALL BE LIMITED TO ONLY THOSE ACTIVITIES WHICH THE SECRETARY CONSIDERS NECESSARY TO PROVIDE THE DATA REQUIRED FOR EVALUATION OF THE SUITABILITY OF SUCH SITE FOR AN APPLICATION TO BE SUBMITTED TO THE COMMISSION FOR A CONSTRUCTION AUTHORIZATION FOR A REPOSITORY AT SUCH SITE, AND FOR COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (42 U.S.C. 4321 ET SEQ.).

"(2) GUIDELINES.-THE SECRETARY SHALL AMEND THE GUIDELINES IN PART 960 OF TITLE 10, CODE OF FEDERAL REGULATIONS, TO BASE ANY CONCLUSIONS REGARDING WHETHER A REPOSITORY SITE IS SUITABLE ON, TO THE EXTENT PRACTICABLE, AN ASSESSMENT OF TOTAL SYSTEM PERFORMANCE OF THE REPOSITORY.

"(B) ENVIRONMENTAL IMPACT STATEMENT.-

"(1) PREPARATION OF ENVIRONMENTAL IMPACT STATEMENT.-CONSTRUCTION AND OPERATION OF THE REPOSITORY SHALL BE CONSIDERED A MAJOR FEDERAL ACTION SIGNIFICANTLY AFFECTING THE QUALITY OF THE HUMAN ENVIRONMENT FOR PURPOSES OF THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (42 U.S.C. 4321 ET SEQ.). THE SECRETARY SHALL PREPARE AN ENVIRONMENTAL IMPACT STATEMENT ON THE CONSTRUCTION AND OPERATION OF THE REPOSITORY AND SHALL SUBMIT SUCH STATEMENT TO THE COMMISSION WITH THE LICENSE APPLICATION. THE SECRETARY SHALL SUPPLEMENT SUCH ENVIRONMENTAL IMPACT STATEMENT AS APPROPRIATE.

"(2) SCHEDULE.-

"(A) NO LATER THAN SEPTEMBER 30, 2000, THE SECRETARY SHALL PUBLISH THE FINAL ENVIRONMENTAL IMPACT STATEMENT UNDER PARAGRAPH (1) OF THIS SUBSECTION.

"(B) NO LATER THAN OCTOBER 31, 2000, THE SECRETARY SHALL PUBLISH A RECORD OF DECISION ON APPLYING FOR A LICENSE TO CONSTRUCT AND OPERATE A REPOSITORY AT THE YUCCA MOUNTAIN SITE.

"(C) LICENSE APPLICATION.-

"(1) SCHEDULE.-NO LATER THAN OCTOBER 31, 2001, THE SECRETARY SHALL APPLY TO THE COMMISSION FOR AUTHORIZATION TO CONSTRUCT A REPOSITORY AT THE YUCCA MOUNTAIN SITE.

"(2) MAXIMIZING CAPACITY.-IN DEVELOPING AN APPLICATION FOR AUTHORIZATION TO CONSTRUCT THE REPOSITORY, THE SECRETARY SHALL SEEK TO MAXIMIZE THE CAPACITY OF THE REPOSITORY, IN THE MOST COST-EFFECTIVE MANNER, CONSISTENT WITH THE NEED FOR DISPOSAL CAPACITY.

"(3) DECISION NOT TO APPLY FOR A LICENSE FOR THE YUCCA MOUNTAIN SITE.-IF, AT ANY TIME PRIOR TO OCTOBER 31, 2001, THE SECRETARY DETERMINES THAT THE YUCCA MOUNTAIN SITE IS NOT SUITABLE OR CANNOT SATISFY THE COMMISSION'S REGULATIONS APPLICABLE TO THE LICENSING OF A GEOLOGICAL REPOSITORY, THE SECRETARY SHALL-

"(A) NOTIFY THE CONGRESS AND THE STATE OF NEVADA OF THE SECRETARY'S DETERMINATIONS AND THE REASONS THEREFOR; AND

"(B) PROMPTLY TAKE THE ACTIONS DESCRIBED IN PARAGRAPHS (1) AND

EXHIBIT 5

2ND REFERENCE of Level 1 printed in FULL format.

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Bill Tracking Report

105th Congress
1st Session

U. S. Senate

S 104

1997 Bill Tracking S. 104; 105 Bill Tracking S. 104

NUCLEAR WASTE POLICY ACT OF 1997

<=A1> Retrieve full text version

DATE-INTRO: January 21, 1997

LAST-ACTION-DATE: June 17, 1997

STATUS: Passed in the Senate

SPONSOR: Senator Frank H. Murkowski R-AK

TOTAL-COSPONSORS: 30 Cosponsors: 3 Democrats / 27 Republicans

SYNOPSIS: A bill to amend the Nuclear Waste Policy Act of 1982.

ACTIONS: Committee Referrals:

01/21/97 Senate Energy and Natural Resources Committee

Legislative Chronology:

1st Session Activity:

01/21/97	143	Cong Rec S 161	Referred to the Senate Energy and Natural Resources Committee
01/21/97	143	Cong Rec S 482	Remarks by Sen. Murkowski AK
01/21/97	143	Cong Rec S 482	Remarks by Sen. Craig ID
01/28/97	143	Cong Rec S 768	Cosponsor(s) added
01/29/97	143	Cong Rec S 818	Cosponsor(s) added
02/05/97	143	Cong Rec D 80	Senate Energy and Natural Resources Committee concluded hearings
02/10/97	143	Cong Rec S 1194	Cosponsor(s) added

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02/12/97 143 Cong Rec S 1319 Cosponsor(s) added

02/24/97 143 Cong Rec S 1480 Cosponsor(s) added

03/12/97 143 Cong Rec D 225 Senate Energy and Natural Resources Committee began markup

03/14/97 143 Cong Rec S 2320 Reported in the Senate

03/14/97 143 Cong Rec S 2331 Remarks by Sen. Dorgan ND

03/20/97 143 Cong Rec S 2630 A motion was entered to close further debate on the motion to proceed to consideration of the bill, and by unanimous consent, a vote on the closure motion will occur on Tuesday, April 8, 1997

03/20/97 143 Cong Rec S 2630 The motion to proceed was withdrawn

03/20/97 143 Cong Rec S 2645 Report to accompany the bill, reported in the Senate (S. Rept. No. 105-10)

03/20/97 143 Cong Rec S 2731 Remarks by Sen. Murkowski AK

03/20/97 143 Cong Rec S 2732 Remarks by Sen. Craig ID

04/07/97 143 Cong Rec S 2766 Senate began consideration of the motion to proceed to consideration of the bill

04/07/97 143 Cong Rec S 2766 A unanimous-consent agreement was reached in the Senate providing for further consideration of the motion to proceed to consideration of the bill on Tuesday, April 8, 1997, with a cloture vote to occur thereon at 5:15 p.m.

04/07/97 143 Cong Rec S 2786 A second motion was entered to close further debate on the motion to proceed to consideration of the bill, and in accordance with the provisions of Rule XXII of the Standing Rules of the Senate, a vote on the closure motion could occur on Wednesday, April 9, 1997

04/07/97 143 Cong Rec S 2791 Cosponsor(s) added

04/07/97 143 Cong Rec S 2791 Cosponsor(s) added

04/07/97 143 Cong Rec S 2797 Remarks by Sen. Murkowski AK

04/08/97 143 Cong Rec S 2820 Senate continued consideration of the motion to proceed to consideration of the bill

04/08/97 143 Cong Rec S 2828 A unanimous-consent agreement was reached in the Senate providing for consideration of the bill on Wednesday, April 9, 1997

04/09/97 143 Cong Rec S 2881 Senate began consideration of the bill, agreeing to committee amendments, and taking action on further amendments proposed thereto

04/09/97 143 Cong Rec S 2900 Murkowski Amendment No. 26, in the nature of a substitute, pending in the Senate

04/09/97 143 Cong Rec S 2900 Thurmond/Hollings Amendment No. 27 (to Amendment No. 26), to provide that the Savannah River Site and Barnwell County, South Carolina shall not be available for construction for an interim storage facility, pending in the Senate

04/09/97 143 Cong Rec S 2900 A motion was entered to close further debate on Amendment No. 26, and in accordance with the provisions of Rule XXII of the Standing Rules of the Senate, a vote on the closure motion will occur on Friday, April 11, 1997

04/09/97 143 Cong Rec S 2900 Senate will continue consideration of the bill

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on Thursday, April 10, 1997

04/09/97 143 Cong Rec S 2933 Murkowski Amendment No. 26, submitted

04/09/97 143 Cong Rec S 2945 Thurmond (and Hollings) Amendment No. 27, submitted

04/10/97 143 Cong Rec S 2951 Senate continued consideration of the bill, taking action on amendments proposed thereto

04/10/97 143 Cong Rec S 2963 of the State of entry, by a recorded vote of 72 yeas and 24 nays
<=A2> (Vote No. 36)

04/10/97 143 Cong Rec S 2963 Senate adopted Thurmond/Hollings Amendment No. 27 (to Amendment No. 26), to provide that the Savannah River Site and Barnwell County, South Carolina shall not be available for construction for an interim storage facility, by voice vote

04/10/97 143 Cong Rec S 2963 Senate adopted Domenici Amendment No. 40 (to Amendment No. 26), to prevent double counting'' in the determination of the fee collected for electricity generated by civilian nuclear power reactors and sold, by voice vote

04/10/97 143 Cong Rec S 2963 Senate tabled Reid/Bryan Modified Amendment No. 28 (to Amendment No. 27), providing that the transportation of spent nuclear fuel or high-level radioactive waste to a centralized interim storage site or to a permanent repository shall not cross any state line without the express written consent of the Governor

04/10/97 143 Cong Rec S 2977 Reid (for Wellstone) Amendment No. 29 (to Amendment No. 26), to ensure that emergency response personnel in all jurisdictions on primary and alternative shipping routes have received training and have been determined to meet standards set by the Secretary before shipments of spent nuclear fuel and high-level nuclear waste, pending in the Senate

04/10/97 143 Cong Rec S 2977 Reid (for Wellstone) Amendment No. 30 (to Amendment No. 26), to express the sense of the Senate regarding Federal assistance for elderly and disabled legal immigrants, pending in the Senate

04/10/97 143 Cong Rec S 2977 Senate adopted Murkowski Amendment No. 36 (to Amendment No. 26), to give authority to the Secretary of Energy to collect fees for electricity generated by civilian nuclear power reactors sold during an offsetting collection period, by voice vote

04/10/97 143 Cong Rec S 2987 Senate adopted Thompson (for rist/Thompson) Amendment No. 37 (to Amendment No. 26), to provide that the President shall not designate the Oak Ridge Reservation in the State of Tennessee as a site for construction of an interim storage facility, by a recorded vote of

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60 years and 33 nays
 <=A3> (Vote No. 37)

04/10/97 143 Cong Rec S 2995 Senate rejected Bumpers Amendment No. 33 (to Amendment No. 26), to clarify Congressional intent with respect to enactment of this Act in response to DOE's inability to meet the January 31, 1998 contractual deadline to start disposing of spent nuclear fuel, by a recorded vote of 24 years and 69 nays

<=A4> (Vote No. 38)

04/10/97 143 Cong Rec S 2995 Senate rejected Bingaman Amendment No. 41 (to Amendment No. 26), to strike the ban on designating certain sites as interim storage facilities, by a recorded vote 36 years and 56 nays

<=A5> (Vote No. 39)

04/10/97 143 Cong Rec S 2996 Lott (for Domenici) Amendment No. 42, (to Amendment No. 26), to provide that no points of order, which require 60 votes in order to adopt a motion to waive such point of order, shall be considered to be waived during the consideration of a joint resolution under section 401 of this Act, pending in the Senate

04/10/97 143 Cong Rec S 2996 A unanimous-consent agreement was reached providing for further consideration of the bill and certain amendments to be proposed thereto, with final disposition to occur thereon on Tuesday, April 15, 1996, and pursuant to the agreement, the cloture vote scheduled for Friday, April 11, 1997, on Amendment No. 26, listed above, was

vitiating

04/10/97 143 Cong Rec S 2996 Senate will resume consideration of the bill on Monday, April 14, 1997

04/10/97 143 Cong Rec S 2996 Murkowski Amendment No. 26, in the nature of a substitute, pending in the Senate

04/10/97 143 Cong Rec S 2996 Lott (for Murkowski) Amendment No. 43 (to Amendment No. 42), to establish the level of annual fee for each civilian nuclear power reactor, pending in the Senate

04/10/97 143 Cong Rec S 3059 Reid (and Bryan) Amendment No 28, submitted

04/10/97 143 Cong Rec S 3059 Wellstone Amendments Nos. 29-30, submitted

04/10/97 143 Cong Rec S 3059 Bingaman Amendments Nos. 31-32, submitted

04/10/97 143 Cong Rec S 3060 Bumpers Amendment No. 33, submitted

04/10/97 143 Cong Rec S 3060 Domenici Amendments Nos. 34-35, submitted

04/10/97 143 Cong Rec S 3061 Murkowski Amendment No. 36, submitted

04/10/97 143 Cong Rec S 3061 Frist (and Thompson) Amendment No. 37, submitted

04/10/97 143 Cong Rec S 3061 Domenici Amendments Nos. 38-39, submitted

04/10/97 143 Cong Rec S 3062 Domenici Amendment No. 40, submitted

04/10/97 143 Cong Rec S 3062 Bingaman Amendment No. 41, submitted

04/10/97 143 Cong Rec S 3062 Domenici Amendment No. 42, submitted

04/10/97 143 Cong Rec S 3062 Murkowski Amendment No. 43, submitted

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04/14/97 143 Cong Rec S 3077 Senate continued consideration of the bill, taking action on amendments proposed thereto

04/14/97 143 Cong Rec S 3077 Senate continued consideration of the bill, taking action on amendments proposed thereto

04/14/97 143 Cong Rec S 3082 Senate adopted Reid (for Wellstone) Amendment No. 29 (to Amendment No. 26), to ensure that emergency response personnel in all jurisdictions on primary and alternative shipping routes have received training and have been determined to meet standards set by the Secretary before shipments of spent nuclear fuel and high-level nuclear waste, by voice vote

04/14/97 143 Cong Rec S 3084 Senate adopted Reid (for Wellstone) Amendment No. 30 (to Amendment No. 26), to express the sense of the Senate regarding Federal assistance for elderly and disabled legal immigrants, by voice vote

04/14/97 143 Cong Rec S 3084 Senate adopted Murkowski (for Lott) Amendment No. 44 (to Amendment No. 30), regarding assistance for elderly and disabled legal immigrants, by voice vote

04/14/97 143 Cong Rec S 3092 Lott (for Domenici) Amendment No. 42, (to Amendment No. 26), to provide that no points of order, which require 60 votes in order to adopt a motion to waive such point of order, shall be considered to be waived during the consideration of a joint resolution under section 401 of this Act, pending in the Senate

04/14/97 143 Cong Rec S 3092 Lott (for Murkowski) Amendment No. 43 (to Amendment No. 42), to establish the level of annual fee for each civilian nuclear power reactor, pending in the Senate

04/14/97 143 Cong Rec S 3113 Bingaman Amendment No. 31 (to Amendment No. 26), to provide for the case in which the Yucca Mountain site proves to be unsuitable or cannot be licensed and to strike the automatic default to a site in Nevada, pending in the Senate

04/14/97 143 Cong Rec S 3113 Senate will continue consideration of the bill on Tuesday, April 15, 1997, with a vote on final passage to occur thereon

04/14/97 143 Cong Rec S 3113 Murkowski Amendment No. 26, in the nature of a substitute, pending in the Senate

04/14/97 143 Cong Rec S 3127 Lott Amendment No. 44, submitted

04/15/97 143 Cong Rec S 3136 Senate tabled Bingaman Amendment No. 31 (to Amendment No. 26), to provide for the case in which the Yucca Mountain site proves to be unsuitable or cannot be licensed and to strike the automatic default to a site in Nevada, by a recorded vote of 59 yeas and 39 nays
<=A6> (Vote No. 40)

04/15/97 143 Cong Rec S 3137 Senate adopted Murkowski Amendment No. 26, in the nature of a substitute, by voice vote

04/15/97 143 Cong Rec S 3137 Senate adopted Lott (for Domenici) Amendment

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No. 42, (to Amendment No. 26), to provide that no points of order, which require 60 votes in order to adopt a motion to waive such point of order, shall be considered to be waived during the consideration of a joint resolution under section 401 of this Act, by voice vote

04/15/97 143 Cong Rec S 3137 Senate adopted Lott (for Murkowski) Amendment No. 43 (to Amendment No. 42), to establish the level of annual fee for each civilian nuclear power reactor, by a recorded vote of 66 yeas and 32 nays
 <=A7> (Vote No. 41)

04/15/97 143 Cong Rec S 3153 Passed in the Senate, by a recorded vote of 65 yeas and 34 nays
 <=A8> (Vote No. 42)

06/17/97 143 Cong Rec S 5884 Remarks by Sen. Abraham MI

BILL-DIGEST: (from the CONGRESSIONAL RESEARCH SERVICE)

Short title as introduced :

Nuclear Waste Policy Act of 1997

Digest :

04/15/97 (Passed Senate, amended) Nuclear Waste Policy Act of 1997 - Amends the Nuclear Waste Policy Act of 1982 to revise and rename it the Nuclear Waste Policy Act of 1997.

Instructs the Secretary of Energy (the Secretary) to: (1) develop and operate an integrated management system for the storage and permanent disposal of spent nuclear fuel and high-level radioactive waste; (2) store spent nuclear fuel and high-level radioactive waste beginning no later than 18 months after issuance of a license for a specified interim storage facility; (3) provide for the transportation of such wastes (using systems and components procured and manufactured in the United States); and (4) engage private sector participation to the greatest extent possible in the implementation of this Act.

Shields the United States from any financial liability for the Secretary's failure to meet acceptance or emplacement deadlines under this Act.

Establishes an integrated management system for spent nuclear fuel and high-level radioactive waste, including its storage, transportation, and disposal.

Sets a deadline for development of the capability to commence rail to truck intermodal transfer from the mainline rail line at Caliente, Nevada, to the interim storage facility site.

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Directs the Secretary to offer to enter into a prescribed benefits agreement with Lincoln County, Nevada, including a payment schedule. Requires conveyance to such County of specified Federal lands.

Prescribes procedural guidelines for the availability of safe transportation for spent **nuclear** fuel and high-level radioactive waste from sites designated by the contract holders to mainline transportation facilities and from mainline transportation facilities to the interim storage facility or repository, using routes that minimize transportation through populated areas. Requires development of a comprehensive management plan that ensures safe transportation from sites designated by the contract holders to the interim storage facility site not later than 24 months after the Secretary submits a license application for an interim storage facility, and after an opportunity for public comment.

Prescribes guidelines under which the Secretary shall: (1) develop a transportation plan for the implementation of each shipping campaign from each site at which high-level **nuclear** waste is stored; and (2) evaluate the relative safety of proposed shipping routes and modes from each shipping origin to the interim storage facility or repository compared with the safety of alternative modes and routes.

Prescribes general transportation requirements, including technical assistance and funds for: (1) States, Indian tribes, and nonprofit employee and joint labor-management organizations for worker health and safety training and education programs; and (2) emergency response situations.

Prohibits shipments of spent **nuclear** fuel and high-level radioactive waste through any grant-eligible jurisdiction: (1) until the Secretary has determined that personnel in all State, local, and tribal jurisdictions on primary and alternative shipping routes have met acceptable standards of training for emergency responses to accidents involving spent **nuclear** fuel and high-level **nuclear** waste; and (2) unless technical assistance and funds to implement safe transportation procedures and emergency response situations have been available for at least three years prior to shipment.

Directs the Secretary to award grants to States and Indian tribes for development and implementation of plans to prepare for such shipments.

Mandates public education programs for States, local governments, and Indian tribes through whose jurisdiction the Secretary plans to transport substantial amounts of spent **nuclear** fuel or high-level radioactive waste.

Requires a transporter of **nuclear** waste under contract with the Secretary to comply with all governmental and Indian tribal

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transportation regulations.

Instructs the Secretary of Transportation to promulgate employee protection training standards for workers directly involved in nuclear waste transportation, storage, and disposal.

Requires the Secretary to provide to the President and the Congress a viability assessment of the Yucca Mountain site by a specified deadline. Prescribes assessment contents.

Authorizes the President to make a determination in his or her sole and unreviewable discretion, disqualifying such site as a repository based upon the President's views that the preponderance of information indicates it is unsuitable for development of a repository of useful size. Mandates a preliminary Secretarial designation of a specific interim storage facility site if the President does not make a determination of unsuitability.

Sets a deadline by which the President must designate a site for construction of an interim storage facility following a determination of unsuitability for the Yucca Mountain site. Precludes from designation for construction of an interim storage facility: (1) the Hanford Nuclear Reservation in the State of Washington; (2) the Savannah River Site and Barnwell County in South Carolina; and (3) the Oak Ridge Reservation in Tennessee.

Requires the Secretary to make a preliminary designation of a specific site within Area 25 of the Nevada Test Site for planning and construction of an interim storage facility if the President does not make a determination of Yucca Mountain unsuitability by the deadline. Deems site approved by law as the interim storage facility site if: (1) the President does not designate a construction site for such a facility; or (2) such construction is not approved by law within 24 months of the President's determination of Yucca Mountain unsuitability for the repository.

Directs the Secretary to submit a topical safety analysis report to the Nuclear Regulatory Commission (NRC) containing a generic design for the facility. Sets a deadline by which the NRC must issue a safety evaluation report approving or disapproving such design. Prescribes authorization guidelines for non-site-specific and site-specific activities for an interim storage facility, and for a permanent repository, including: (1) licensing standards; (2) compliance with the National Environmental Policy Act; and (3) land withdrawal.

Authorizes the Secretary to: (1) make grants to enable affected Indian tribes or local governmental units to monitor and review the impact of the integrated management system upon residents at the Yucca Mountain site; and (2) offer financial and technical assistance, as well as payments in lieu of taxes, to help a tribe or local

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governmental
unit to mitigate such impact.

Directs the Secretary to offer an affected local government unit the opportunity to designate an on-site representative to conduct oversight activities at an interim storage facility or repository site.

Provides that acceptance of benefits under this Act by any affected Indian tribe or local government shall not be deemed an expression of consent to the siting of an interim storage facility or repository in Nevada.

Instructs the Secretary of the Interior to convey all Federal interest in specified property to Nye County, Nevada.

Prescribes contract guidelines for the Secretary to accept title to, and transport, store, and dispose of spent nuclear fuel or high-level radioactive waste. Prescribes a schedule of annual fees payable to the Secretary of Energy for electricity generated and sold by civilian nuclear power reactors, and of a one-time fee for spent nuclear fuel used in such generation. States that payment of the latter one-time fee relieves the payer of further financial obligation to the Federal Government for its long-term storage or permanent disposal of spent fuel or waste derived from spent nuclear fuel used to generate electricity in a civilian power reactor before January 7, 1983. Mandates annual fee reviews, and adjustment proposals to the Congress if appropriate.

Continues the Nuclear Waste Fund.

Establishes the Office of Civilian Radioactive Waste Management within the Department of Energy, whose Director shall be directly responsible to the Secretary for executing the Secretary's functions under this Act.

Directs the Secretary to issue a final rule establishing the appropriate portion of the costs of managing high-level radioactive waste and spent nuclear fuel allocable to the interim storage or permanent disposal of high-level radioactive waste from atomic energy defense activities and spent nuclear fuel from foreign research reactors. Authorizes appropriations.

Preempts State and local law in favor of this Act. Identifies subjects expressly preempted.

Grants U.S. courts of appeals original and exclusive jurisdiction over civil actions under this Act. Prescribes guidelines for NRC licensing hearings regarding facility expansions and transshipments.

Prohibits the Secretary from conducting site-specific activities for a second repository unless the Congress has specifically authorized and appropriated funds for them.

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Requires the NRC to promulgate regulatory guidelines for: (1) financial arrangements for low-level radioactive waste site closures; and (2) training and qualification of civilian nuclear powerplant personnel.

Delineates an emplacement schedule for contract holders' spent nuclear fuel and high-level radioactive waste.

States that the Secretary's acceptance of spent nuclear fuel or high-level radioactive waste constitutes a transfer of title to the Secretary. Authorizes the Secretary to: (1) accept all spent nuclear fuel withdrawn from Dairyland Power Cooperative's La Crosse Reactor; and (2) pay for the on-site storage of such fuel until DOE removes it from the site.

Authorizes the Secretary to establish a Decommissioning Pilot Program to decommission and decontaminate the sodium-cooled fast breeder experimental test-site reactor located in northwest Arkansas. Prohibits the use of funds from the Nuclear Waste Fund for such Pilot Program.

Declares that nothing in this or any other Federal law shall be construed as a reservation of Federal water or water rights for any purpose arising under this Act. Authorizes the United States to acquire and exercise such rights, subject to certain restrictions.

Authorizes the NRC to establish licensing procedures for any technology for the dry storage of spent nuclear fuel without, to the maximum extent possible, the need for site-specific NRC approvals.

Continues the Nuclear Waste Technical Review Board. Authorizes appropriations.

Directs the Secretary to take necessary action to improve the management of the civilian radioactive waste management program to ensure to the maximum extent its operation like a private business.

Directs the Secretary to: (1) create a value engineering function within the Office of Civilian Radioactive Waste Management; and (2) employ, on an on-going basis, integrated performance modeling regarding site characterization.

Expresses the sense of the Senate that: (1) the Secretary and the petitioners in Northern States Power (Minnesota), v. Department of Energy, should enter into a settlement agreement to resolve the issues pending before the United States Court of Appeals before enactment of this Act; and (2) elderly and disabled legal immigrants who are unable to work should receive assistance essential to their well-being, and that the President, Congress, the States, and faith-based

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and other organizations should continue to work together toward that end.

CRS Index Terms:

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Actions and defenses
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Agriculture
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7/9/96 SFEX A2	R 3 OF 5	USNEWS	Page
7/9/96 S.F. Examiner A2			
1996 WL 3713674			

San Francisco Examiner
Copyright 1996

Tuesday, July 9, 1996

NEWS

Wildfires dance across Sierra Lightning, rains, gusty winds keep firefighters guessing as blazes scatter south of Reno
Larry D. Hatfield
EXAMINER STAFF

Two major wildfires and a swarm of smaller ones continued to burn on the east side of the Sierra Nevada Tuesday, with a quirky Mother Nature assisting firefighters with some of them while at the same time starting others.

"Mother Nature's just going a little crazy with her lightning tonight," said interagency fire spokeswoman Linda Massey on Monday night as lightning sparked more little fires in the high country south of Reno.

At the same time, erratic and gusty winds fanned flames in tinder-dry chaparral and grasslands while sometimes heavy rain and even occasional hail helped douse them.

The most serious fires were the three-day-old blaze that continued to threaten the small town of Coleville in Antelope Valley and another that imperiled the hamlet of Nixon on the south end of Pyramid Lake.

In Southern California, fire crews were demobilizing after quelling several fires, including a week-old 2,975-acre brush fire near New Cuyama, on the northern slopes of the Sierra Madre range in Los Padres National Forest northeast of Santa Barbara.

Firefighters, though hampered by afternoon thunderstorms that brought unwanted lightning and wind, said they had lines around about 60 percent of the biggest Sierra fire - a 2,000-acre burn that was a combination of three smaller ones that joined forces Monday morning in Mono County.

The lightning-sparked fire between Sonora Pass and U.S. Highway 395 no longer threatened the village of Walker or the U.S. Marine Corps' Mountain Warfare Training Center

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at Pickel Meadows. But flare-ups continued on the outskirts of Coleville.

Firefighters expected to have the fire encircled by Wednesday night and out by Thursday night.

More than a dozen smaller fires were ignited by lightning around the big fire but they either were out or posed no serious danger. About 240 firefighters using helicopters, planes and ground equipment were fighting the blaze.

More thunderstorms were forecast in the mountains for Tuesday afternoon.

To the north, a 1,000-acre lightning-caused fire doubled in size overnight and burned close to Nixon and some farm buildings on Nevada's Pyramid Lake Indian Reservation north of Reno.

"With the resources we have on order, we're hoping to attack it before it gets any bigger," Massey said. As it did in the Coleville fire, rain aided firefighters in keeping the fire from growing.

So far, none of the fires, involving hundreds of firefighters in both Northern and Southern California, has produced any serious injuries. Fire officials said bee stings and poison oak were the most serious problems.

Fires continued to burn elsewhere in the West in states plagued by one of the worst droughts of the century. The Utah town of Terra, east of Dugway Proving Grounds and 60 miles southwest of Salt Lake City, was evacuated as two lightning fires threatened it and houses on the Skull Valley Indian Reservation.

The two fires scorched some 31,000 acres of desert. Another fire had burned about the same acreage near Cove Fort on Interstate 15, about 175 miles south of Salt Lake, and a 300-acre fire was out of control in the rugged Pole Canyon area along the Utah-Nevada border south of Wendover.

In Terra, erratic winds that had the fire "going every direction" died down at night, and the blaze was moving slowly, said Kathy Jo Pollock of the Interagency Fire Center.

About 15 miles away, a 1,000-acre fire threatened homes on

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the Skull Valley Reservation and some buildings on private land, Pollock said.

The fires began Monday afternoon and were likely caused by lightning. They were being battled by 80 firefighters that were assisted by state fire engines and retardant drops from air tankers.

TABULAR OR GRAPHIC MATERIAL SET FORTH IN THIS DOCUMENT IS NOT DISPLAYABLE

PHOTO; Credit: AP / DOUGLAS C. PIZAC; Caption: Fire lights the sky near Cove Fort, Utah, Monday as a firefighter radioes his command post.; MAP; Credit: EXAMINER GRAPHICS; Caption: (LOCATING WILDFORES IN CALIFORNIA AND NEVADA)

----- INDEX REFERENCES -----

KEY WORDS: BRUSH FIRES; FOREST FIRES

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7/9/96 SFEX A2

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7/11/96 LVRJ 5B	R 2 OF 27	USNEWS	Page
7/11/96 Las Vegas Rev.-J. 5B			
1996 WL 2344898			

The Las Vegas Review-Journal
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Thursday, July 11, 1996

B

Firefighters gain upper hand on lightning-sparked blazes in Utah
Associated Press

Associated Press

SALT LAKE CITY - Firefighters have gained the upper hand on two fires that threatened the small western Utah town of Terra and the nearby Skull Valley Indian Reservation, burning 36,000 acres.

Although firefighters had to deal with whirlwinds and lower humidity on Wednesday, the fires did not advance, said Jane Pennell, a fire information officer at the Army's Dugway Proving Ground. The fires were burning west of the Army base and about 60 miles southwest of Salt Lake City.

Crews were building a line around the east side of the 31,500-acre Davis-Knolls fire and were dousing hot spots, Pennell said.

The blaze was started by lightning on Monday and threatened the homes in and around Terra and some structures on the nearby Indian reservation.

Several dozen Terra residents who had been evacuated Monday returned to their homes the next day.

The Davis-Knolls blaze scorched at least seven power poles, cutting off electricity to the Dugway Army base and the surrounding area late Monday night. Electricity was restored Tuesday, Utah Power spokesman Dave Eskelsen said.

By Wednesday morning, fire crews had it 60 percent contained and predicted it would be under full control by Friday evening.

Meanwhile, fire crews were working toward full control of the 4,500-acre blaze near the Skull Valley Goshute Indian Reservation Wednesday evening. The fire there, 10 miles to the north of the Davis-Knolls fire, destroyed a corral but did not threaten other structures.

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To the south, the last of the five fires that made up the 42,000-acre Sorenson Complex of fires in west-central Utah was declared contained Tuesday evening, with control expected today, said Bert Hart, public information officer for the Bureau of Land Management's Richfield District.

Overnight Tuesday, fire crews with the help from BLM in Nevada discovered and contained a 300-acre lightning fire just east of Topaz Mountain, about 45 miles northwest of Delta. Wildfires burn in Nevada

Review-Journal

A rash of small wildfires in White Pine County has destroyed more than 250 acres, Bureau of Land Management officials said Wednesday.

Curtis Tucker, a BLM special projects coordinator at the agency's Ely district office, said more than 30 fires have been reported in White Pine and Lincoln counties in the past two days. The cause for each blaze is believed to be lightning.

"In the 24-hour period around July 8, we had more than 6,000 lightning strikes reported," Tucker said. "I've been in eastern Nevada for more than 10 years, and this is the worst I've seen."

The majority of the fires have been attacked and contained before they could cause major damage, Tucker said. In one fire in Lincoln County, a BLM truck was destroyed when winds shifted, causing firefighters to abandon the vehicle.

---- INDEX REFERENCES ----

EDITION: FINAL

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Thursday, July 11, 1996

B

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Associated Press

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EXHIBIT 8

1ST STORY of Level 1 printed in FULL format.

Copyright 1997 The Salt Lake Tribune
The Salt Lake Tribune

January 1, 1998, Thursday

SECTION: Nation-World; Pg. A1

LENGTH: 1437 words

HEADLINE: Army: Nerve Agent Near Dead Utah Sheep in '68; Feds Admit Nerve Agent Near Sheep

BYLINE: JIM WOOLF THE SALT LAKE TRIBUNE

BODY:

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The Army for many years has had proof that nerve agent was found in the area where 6,000 sheep were killed in western Utah in 1968, according to a report obtained by The Salt Lake Tribune.

The information is no surprise to the people who were first on the scene.

Then-Tooele County Sheriff Bill Pitt, in recalling the frightening scene of convulsing sheep and a near-hysterical shepherd, says "We didn't know what was going on. Then we got a call that said the Army had been testing nerve gas. It put a shock in all of us."

From that first day -- March 14, 1968 -- it was apparent that a deadly nerve agent from the Army's Dugway Proving Ground in western Utah drifted off the base and killed the sheep in Skull and Rush valleys.

It never has been acknowledged by the Army, however.

But the newly found report describes the evidence of nerve agent as "incontrovertible."

"Agent VX was found to be present in snow and grass samples that were received approximately three weeks after the sheep incident," said the 1970 report by researchers at the Army's Edgewood Arsenal in Maryland.

The 1970 report acknowledges difficulty calculating how much VX the sheep were exposed to on March 14, 1968, but concluded: ". . . it is possible that the quantity of VX originally present was sufficient to account for the death of the sheep."

Originally stamped "confidential" and distributed to a few military libraries, the document was declassified in 1978. It apparently has not been distributed outside the military since its release. This and other follow-up reports submitted after the sheep-death controversy subsided were simply filed away. The Army never has done a detailed retrospective of the accident to finally resolve what happened.



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"To the best of my knowledge, this is the first documented admission" that VX killed the sheep, says Steve Erickson, spokesman for a military watchdog group known as the Downwinders. "It's not news in the sense that everyone knows the Army did it."

The closest the military has come to an official admission was a press release issued by the U.S. Department of Defense on April 18, 1968. It conceded that evidence collected in the month after the incident "points to the Army's involvement in the death of the sheep." But the statement said too many unanswered questions remained to conclusively place blame.

That remains the Army's position today. Col. John Como, commander of Dugway Proving Ground, this week issued the following statement:

"The Army did not, and still doesn't, accept responsibility for the sheep deaths in Skull Valley. There has been a lot of conjecture, but extensive efforts by Utah State and Department of Agriculture scientists never identified the precise causal chain that led to the deaths of the sheep.

"The Army's own investigation revealed that an open-air test of a lethal chemical agent at Dugway on 13 March 1968 MAY HAVE [his emphasis] contributed to the deaths of the sheep. The Army's investigation, as well as the investigations by all the other government bodies involved, concluded the Dugway personnel were not negligent in the test in question. As a result of this incident, a special committee chaired by the Surgeon General of the United States reviewed the test procedures at Dugway, and the Army adopted subsequently new controls on open air testing," wrote Como.

VX is a nerve agent so powerful that a single drop on the skin can result in death within about 15 minutes. It works by disrupting the nervous system and causing breathing to stop. VX has a thick, oil-like consistency that allows it to be sprayed on plants prior to enemy troops marching through an area. It remains toxic for at least several days.,

GB is the other common form of nerve agent. It vaporizes quickly when exposed to air forming a deadly gas. GB dissipates rapidly.

The 1970 report confirming the presence of VX adds another piece to the mountain of evidence that nerve agent killed the sheep.

The Army's initial investigation into the sheep deaths, a more than 1,000-page document released in 1968 by Brig. Gen. William W. Stone, hinted that nerve agent may have been found in the area. It said scientists had isolated probable "traces" of a "nerve agent or similar organic compound" in environmental samples collected where the sheep died.

Stone's investigation also disclosed that a chemical found in the blood, stomach and liver of the dead sheep was "related to nerve gas samples" from Dugway. Experts questioned whether there was enough to kill the animals, however.

And a 1972 report, also produced by the Edgewood Arsenal, found that laboratory sheep fed grass contaminated with VX showed exactly the same symptoms



The Salt Lake Tribune, January 1, 1998

seen in Skull Valley.

Sheep fed grass contaminated with several common insecticides exhibited different symptoms, said the Edgewood report. This refuted military suggestions soon after the incident that insecticides might have caused the Utah deaths.

Although the Army never accepted responsibility for the sheep deaths, the government later compensated ranchers for their lost animals. Worldwide publicity about the incident contributed to then-President Nixon's decision to ban all open-air testing of chemical weapons in 1969.

Federal officials four years ago launched a program to find and test the sheep burial sites to determine whether any hazardous substances remain hidden beneath the surface. Testing of recently discovered burial pits on the Skull Valley Band of Goshute reservation is scheduled to begin within the next few months.

Danny Quintana, attorney for the Skull Valley Band of Goshute, says a detailed re-analysis of the 1968 sheep deaths may shed new light on the long-term environmental and physiological consequences of chemical weapons.

Tribal leaders note that several older persons living on the reservation died soon after the sheep incident. "They think it was related to this, but we are never going to be able to prove it," says Quintana.

Careful study of the Dugway incident also could help unravel questions about health problems reported by Gulf War veterans who believe they were exposed to nerve agents, adds the attorney, and help the nation be better prepared for possible chemical weapon attacks by terrorists.

"The best way to do it is learn what happened with the sheep," Quintana says.

The Dugway sheep incident is loaded with symbolic value in Utah. It is brought up regularly at public hearings as one of two reasons Utahns distrust the Army and -- to a lesser degree -- all other federal agencies. The other frequently cited cause of distrust is federal lies about the safety of open-air nuclear weapon testing at the Nevada Test Site in the 1950s and 1960s that sent clouds of radioactive fallout drifting into Utah.

The Stone investigation shows that on March 13, 1968 -- the day before the sheep died -- Dugway employees conducted three activities with nerve agents. One was a test of a single artillery shell filled with a chemical agent, and another was the disposal of about 160 gallons of nerve agent in an open burn pit.

The sheep deaths usually are linked to the third activity -- a test in which a low-flying jet fighter sprayed nerve agent in a barren target area about 27 miles west of Skull Valley. Later reports indicated one of the tanks malfunctioned and some of the nerve agent continued to be sprayed as the jet finished its run and began climbing high into the sky.

Dugway's meteorological reports indicated the wind was blowing out of the northwest at the time of the test, but later shifted to the west as a small storm front passed. These west winds could have carried nerve agent directly

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over the sheep herds.

"There were scattered cumulus clouds in the general area at the time of the test and scattered rain showers developed during the evening," said the Defense Department's 1968 press release. "One of these rain showers could have washed this airborne agent out of the air and deposited it on vegetation and the ground."

Sheep are believed to have been hit hardest by nerve agent because they were eating contaminated grass and snow. Sheep are one of the few domestic animals that can get enough water from snow to survive. A few dead birds and rabbits also were found.

Shepherds and other people in the area were examined by doctors, but military experts reported no indication of illness related to nerve agents. At least one Skull Valley rancher who ate snow during this period has complained of chronic health problems since the incident.

GRAPHIC: The Salt Lake Tribune Graphic: Sheep Deaths

Jump Page A13: Courtesy of the Bureau of Indian Affairs

Dead sheep are buried in Utah's Skull Valley in 1968. A newly found report shows Army nerve agent was found at the site.

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EXHIBIT 9

Missile Takes Wrong Turn At Dugway

Accident Wrecks Controls For Japanese Telescopes

BY JOHN HEILPRIN and LEE SIEGEL

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An Air Force cruise missile flew out of control and crashed during a test Wednesday, wrecking two unoccupied trailers containing computers that control Japanese cosmic-ray telescopes at the Army's Dugway Proving Ground.

"Both of them [trailers] were essentially destroyed or received extensive damage as a result of the impact," said Lt. James Wilson, spokesman for the 388th Fighter Wing at Hill Air Force Base, which operates the Utah Test and Training Range at Dugway.

He said there were no injuries.

The 20-foot-long advanced cruise missile was launched from a B-52 bomber that had taken off from Minot Air Force Base, N.D., Wilson said. After failing to make a turn as planned over Dugway, the missile crash-landed at 2:46 p.m. in a remote area two miles from its intended target. Wilson said the missile's payload was an unarmed dummy warhead.

Air Force officials weren't immediately sure if the missile hit the two trailers or simply wrecked them by crashing nearby, Wilson said.

"We've already begun our investigation to figure out what went wrong with this test, and obviously we'll use that to prevent a future mishap," he said.

Hill spokesman Bill Orndorff said the trailers were "leased to the University of Tokyo, and the computers inside were their equipment."

Pierre Sokolsky, a University of Utah physicist, said seven Japanese telescopes, which operate only at night, are located on the southwest edge of the Cedar Mountains, approximately 10 miles northwest of

Missile Wrecks Trailers In Western Utah

■ Continued from A-1

of base facilities at English Village.

The missile "was activated and tumbled and lost control" but did not damage the telescopes near the trailers, said Richard Koehn, vice president for research at the U., which helps run the Japanese project.

"Does the Air Force have a means of compensating us for our losses?" Koehn wondered.

Cruise missiles can be fired from ships, ground launchers or planes. They are computer-controlled and follow land contours to avoid detection.

Sokolsky said U. physicists had been unable by Wednesday night to locate Japanese physicists who run the telescopes, so they "are at the moment unaware that this transpired."

The accident "is certainly a setback" for the Japanese cosmic-ray project, said Craig Taylor, physics chairman at the U.

He said the computers are "the brains for running the telescopes, and they [Japanese scientists] will have to reconstitute the computers that were lost in order to get

the system up and running again."

The Japanese project is one of three existing or planned cosmic-ray observatories in Utah.

The U.'s Fly's Eye cosmic-ray observatory was built at Dugway in the early 1980s and is undergoing a \$10 million upgrade. The seven Japanese telescopes at Dugway initially were meant to be prototypes for a \$50 million set of 100 telescopes named the Telescope Array. A third cosmic-ray observatory, the \$50 million Pierre Auger Project, has been proposed in central Utah's Millard County.

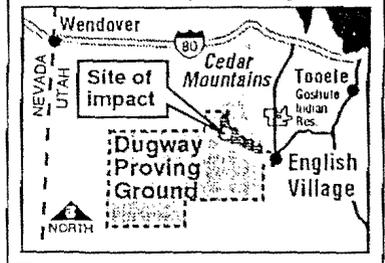
But funding problems in the United States and Japan have prompted physicists to consider merging Japan's Telescope Array and a proposed second upgrade to the Fly's Eye into a single project named the Snake Array, which would make observations jointly with the Auger Project. The Snake Array would include sets of cosmic-ray telescopes on 11 hills stretching 140 miles in a snake-like path from Dugway south to Millard County.

Sokolsky said the Snake Array would not be built for several years, so the mishap's implications for the project remain uncertain.

However, "this clearly shows that accidents do happen out there," he said. "We'll have to evaluate what that means long-term and make sure the safety of life and limb is preserved."

Missile Runs Amok

A cruise missile lost control and hit two trailers that control Japanese cosmic-ray telescopes at Dugway Proving Ground. The impact site was on the southwest edge of the Cedar Mountains northwest of English Village.



Steve Baker / The Salt Lake Tribune

All three projects are aimed at finding the mysterious source of ultrahigh-energy cosmic rays, which bombard Earth and are the most energetic particles in the universe. A single subatomic cosmic-ray particle carries the force of a fast-pitched baseball. In 1991, the Fly's Eye detected the highest-energy cosmic ray discovered to date.

Scientists believe ultrahigh-energy cosmic rays might be generated by supermassive black holes, the centers of active galaxies, the mysterious "dark matter" that may make up much of the universe, or perhaps the breakdown of theorized "cosmic strings" left over from the birth of the universe.

To: BTA

From: STN

EXHIBIT 10

DOCKETED
1/21/98

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

'98 JAN 22 P5:25

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In the Matter of:)
)
)
Private Fuel Storage, L.L.C.,)
(Independent Spent Fuel Storage)
Installation))
<hr/>	

OFFICE OF THE
GENERAL COUNSEL
ADJUTANT GENERAL

Docket No. 72-22

PETITION OF CASTLE ROCK LAND & LIVESTOCK, L.C.,
SKULL VALLEY CO., LTD, AND ENSIGN RANCHES OF UTAH, L.C. FOR NON-
APPLICATION OR WAIVER OF COMMISSION REGULATIONS, RULES, AND
GENERAL DETERMINATIONS

INTRODUCTION

Petitioners Castle Rock Land & Livestock, L.C., a Utah limited liability company, Skull Valley Co., Ltd., a Utah limited partnership, and Ensign Ranches of Utah, L.C., a Utah limited liability company (collectively, "Castle Rock") have petitioned to intervene in proceedings (the "Proceedings") regarding the application of Private Fuel Storage, L.L.C. ("PFS"), for a license (the "License") to store spent nuclear fuel at an alleged independent spent fuel storage installation ("ISFSI") at the Skull Valley Indian Reservation (the "Goshute Reservation") in Tooele County, Utah. Castle Rock timely filed a Petition to Intervene in the Proceeding, filed Contentions on November 21, 1997 (the "Contentions"), and is filing its reply with respect to its Contentions concurrently herewith.

In the responses of PFS and the staff (the "Staff") of the Nuclear Regulation Commission (the "Commission") to the Contentions, each assert that certain of the Contentions challenge 10 C.F.R. Part 72, 10 C.F.R. § 51.23, or the so-called Waste Confidence Decision. Although Castle Rock has generally disputed the characterization of such Contentions as attacks on

Commission regulations or the Waste Confidence Decision, Castle Rock files this petition for waiver (the "Petition") pursuant to 10 C.F.R. section 2.758(b) to seek (i) a determination that the Commission does not have authority to grant the License under 10 C.F.R. Part 72, and therefore 10 C.F.R. Part 72 is inapplicable to the Proceeding (or an exception permitting a challenge to the Commission's authority to license the proposed facility) and (ii) waiver of, or an exception permitting a challenge to, portions of 10 C.F.R. § 51.23 and the Waste Confidence Decision, as each applies to the Proceeding. Castle Rock requests that the Licensing Board consider this Petition on the merits and/or certify it to the Commission, as the Licensing Board deems appropriate.

Discussion

I. Standards Governing a Section 2.758(b) Petition.

The requirements for a petition for waiver are set forth in 10 C.F.R. § 2.758, which provides:

(b) A party to an adjudicatory proceeding involving initial or renewal licensing subject to this subpart may petition that the application of a specified Commission rule or regulation or any provision thereof . . . be waived or an exception made for the particular proceeding. The sole ground for petition for waiver or exception shall be that special circumstances with respect to the subject matter of the particular proceeding are such that the application of the rule or regulation would not serve the purpose for which the rule was adopted. The petition shall be accompanied by an affidavit that identifies the specific aspect or aspects of the subject matter of the proceeding as to which the application of the rule or regulation (or provision thereof) would not serve the purposes for which the rule or regulation was adopted, and shall set forth with particularity the special circumstances alleged to justify the waiver or exception requested.

. . .

(c) If, on the basis of the petition, affidavit, and any response . . . the presiding officer determines that the petitioning party has not made a prima facie showing that the application of the specific Commission rule or regulation or provision thereof to a particular aspect or aspects of the subject matter of the proceeding would not serve the purposes for which the rule or regulation was adopted and that application of the rule or

regulation should be waived or an exception granted, no evidence may be received on that matter . . . and the presiding officer may not further consider the matter.

(d) If, on the basis of the petition, affidavit, and any response . . . , the president officer determines that such a prima facie showing has been made, the presiding officer shall, before ruling thereon, certify directly to the Commission for determination the matter of whether the application of the Commission rule or regulation or provision thereof . . . should be waived or an exception made. The Commission may, among other things, on the basis of the petition, affidavits, and any response, determine whether the application of the specified rule or regulation (or provision thereof) should be waived or an exception made, or direct such further proceedings as it deems appropriate to aid in its determination.

10 C.F.R. § 2.758.¹ Thus, to the extent Castle Rock makes a prima facie showing that special circumstances unique to this Proceeding cause the questioned rule or regulation to not serve the purpose for which it was adopted, the presiding member of the Licensing Board should certify this Petition to the Commission for evaluation on the merits or such other proceedings as the Commission sees fit.²

¹ The Commission has held that special circumstances are present only if the petition properly pleads one or more facts, not common to a large class of facilities, that were not considered either explicitly or by necessary implication in the proceeding leading to the promulgation of the rule sought to be waived. See Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), CLI-88-10, 28 NRC 573, 596-97 (1988).

² Some Commission precedent might be read to suggest that the petition and supporting affidavit must indicate the presence of a significant safety problem related to the rule. See Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), CLI-88-10, 28 NRC 573, 597 (1988). However, this requirement appears to be unique to Seabrook Station--in which the rule sought to be waived (excepting utilities for the financial qualifications requirement) actually inhibited safety instead of enhancing it. With respect to Part I of this Petition the existence or non-existence of authority to license the PFSF should be determinative, regardless of whether any safety problems are evident. Nevertheless, failure to "waive" the rule, i.e. terminate the 10 C.F.R. Part 72 proceeding, would definitely create significant safety problems. There are serious transportation risks associated with a centralized storage facility. The fact that the PFSF is to be sponsored by a private entity with no prior operating history creates issues concerning the financial stability of PFSF and whether it will engage in shortcuts as revenues fall short. Finally, as explained in Part III, removing spent fuel from the facility and decommissioning will of necessity take decades, creating safety problems related to possibly

II. Licensing of the Proposed PFSF as an ISFSI under 10 C.F.R. Part 72.

A. Introduction.

Special circumstances unique to this Proceeding require certification of this Petition to the Commission and determination by the Commission that the Proceeding is not appropriately commenced under 10 C.F.R. Part 72. As is demonstrated by the attached affidavit and factual summary that follows, the Application seeks a license for a private, off-site facility storing 40,000 MTU of spent nuclear fuel for an indefinite period into the future. This is, to Castle Rock's knowledge, the first proceeding in which the Commission has been asked to approve an initial application for a private, off-site ISFSI since the enactment of the NWPA. Moreover, this Application relates to a proposed ISFSI designed to hold up to 40,000 MTU of spent nuclear fuel--an amount more than two and one-half times as large as the amount even the federal government is authorized to store on an interim basis. These special circumstances raise the question of whether 10 C.F.R. Part 72 is appropriately invoked in this Proceeding. As will be demonstrated below, the Commission does not have authority to license an off-site, private 40,000 MTU storage facility under 10 C.F.R. Part 72 or otherwise. Accordingly this Petition should be certified to the Commission and all requested relief should be granted.

B. Special Circumstances Unique to this Proceeding Cause Granting the License to Be Outside of the Commission's Authority.

The Nuclear Waste Policy Act of 1982, 42 U.S.C. § 10101 et seq. (the "NWPA") creates a comprehensive program for the interim storage and permanent disposal of spent nuclear fuel. Indiana Michigan Power Co. v. Dep't of Energy, 88 F.3d 1272, 1273 (D.C. Cir. 1996);

dwindling revenues from only partial occupancy and ongoing transport of spent fuel.

DOE Final Interpretation of Nuclear Waste Acceptance Issues, 60 Fed. Reg. 21793 (1995) (describing the NWPA as a "comprehensive framework for disposing of high level radioactive waste and spent nuclear fuel"). The comprehensive program outlined in the NWPA calls for interim storage of spent nuclear fuel to take place in a DOE-sponsored MRS, on the site of existing nuclear power plants and, to a limited extent, in DOE-initiated off-site and cooperative storage facilities, until such fuel is placed in a permanent repository. The NWPA expressly provides that its comprehensive scheme does not include the licensing of interim storage of spent nuclear fuel in private, off-site facilities. Contrary to the provisions of the NWPA, PFS seeks a license under 10 C.F.R. Part 72 for an off-site, private "ISFSI" to store up to 40,000 MTU of spent fuel for an extended, possibly permanent, period. Because licensing PFS to operate such a facility is fundamentally at odds with the comprehensive program outlined by Congress in the NWPA, no regulation, including 10 C.F.R. Part 72, may be interpreted to countenance the Application. Accordingly, 10 C.F.R. Part 72 should be deemed improperly invoked in the Proceeding and the Application should be dismissed.

The Commission's authority to license interim nuclear waste storage facilities is limited to the authority delegated to it by Congress, and the Commission may not use its discretionary power to act contrary to the manifest will of Congress. "It is axiomatic that an administrative agency's power to promulgate legislative regulations is limited to the authority delegated by Congress." Davis County Solid Waste Management v. Environmental Protection Agency, 101 F.3d 1395, 1410 (D.C. Cir. 1996). Although an administrative agency has some discretionary authority to interpret statutes or promulgate regulations to carry out its statutorily mandated functions, an agency "cannot rely on its general authority to make rules necessary to carry out

its functions when a specific statutory directive defines the relevant function of [the agency] in a particular area. American Petroleum Institute v. Environmental Protection Agency, 52 F.3d 1113, 1119 (D.C. Cir. 1995); National Mining Ass'n v. Dep't of Interior, 105 F.3d 691, 694 (D.C. Cir. 1997). Moreover, a regulation may not be sustained "when that regulation is fundamentally at odds with the manifest congressional design." Western National Mutual Insurance Company v. Commissioner, 65 F.3d 90, 94 (8th Cir. 1995); Webb v. Hodel, 878 F.2d 1252, 1255 (10th Cir. 1989) (regulations are "entitled to no deference if they are inconsistent with congressional intent" or "if there are compelling indications that the regulations are wrong").

In determining whether an agency has exceeded its authority in interpreting a statute or promulgating regulations, a two step process is employed:

First, we ask whether Congress has spoken unambiguously to the question at hand. If it has, then our duty is clear: We must follow that language and give it effect. If not, we consider the agency's action under the second step of Chevron, deferring to the agency's interpretation if it is reasonable and consistent with the statute's purpose.

Indiana Michigan Power Co. v. Dep't of Energy, 88 F.3d 1272, 1274 (D.C. Cir. 1996) (internal quotations and citations omitted). Amalgamated Transit Union, AFL-CIO v. Brock, 809 P.2d 909, 915 (D.C. Cir. 1987).

PFS proposes to construct and operate a Private Fuel Storage Facility (the "PFSF") at an away-from-reactor site located on the Goshute Reservation, in Tooele County, Utah. (See Affidavit of Bryan Allen ("Allen Affidavit") ¶ 3 ; Application of PFS (the "Application") 1.1). PFS seeks to have the proposed PFSF licensed as an ISFSI pursuant to 10 C.F.R. Part 72. (Allen Affidavit ¶ 3; Application 1.1; see also Notice of Opportunity for Hearing, 62 Fed. Reg. 41,099). The proposed PFSF is designed to store spent fuel containing up to 40,000 metric tons

of uranium ("MTU") from commercial reactors. (Allen Affidavit ¶ 4; Emergency Plan ("EP") 1.1). The proposed PFSF is designed to store spent fuel for up to 40 years, at which time, PFS asserts all of the spent fuel will have been transferred off-site, and the facility will be ready for decommissioning. (Allen Affidavit ¶ 4; EP 1.1). As required by 10 C.F.R. Part 72, PFS has applied for only a twenty year license; nevertheless, the Application states that PFS intends to file an application for license renewal for an additional 20 year term, if necessary. (Allen Affidavit ¶ 4; EP 1.1).

Under the Atomic Energy Act of 1954, as amended (the "AEA"), Congress authorized the predecessor of the Commission, the Atomic Energy Commission, to license the private use of special nuclear material. (See Section 53(a) of the Atomic Energy Act of 1954, codified as 42 U.S.C. § 2073). Congress did not include any provisions in the AEA expressly authorizing the Atomic Energy Commission or its successors to store, or license the storage of, spent nuclear fuel.

In 1980, the Commission promulgated 10 C.F.R. Part 72, related to licensing of the interim storage of spent nuclear fuel in ISFSIs. The Commission based its authority to license ISFSIs under 10 C.F.R. Part 72 primarily on Section 53(a) of the AEA. (See: Licensing Requirements for the Storage of Spent Fuel in an ISFSI, 45 Fed. Reg 74, 693 (November 12, 1980) (the "1980 Release"). As amended, Section 53(a) gives the Commission general authority to issue licenses for the transfer, acquisition, and possession of "special nuclear material," primarily for use in the development of civilian, commercial nuclear power. (42 U.S.C. § 2073; see also Senate Report No 1325 (1964), reprinted in 1964 U.S.C.C.A.N. 3111-3113). When Section 53(a) was passed in the 1950s, and then amended in the 1960s, Congress and the nuclear

energy industry anticipated that spent nuclear fuel would be reprocessed. (See House Report No. 97-491 (1982), reprinted in 1982 U.S.C.C.A.N 3792, 3793-94). Consistent with this expectation, Congress omitted from the AEA any language authorizing the Commission (or its predecessor agency) to license the interim or permanent storage of nuclear fuel.

Subsequent to the enactment of the AEA and promulgation by the Commission of 10 C.F.R. Part 72,³ Congress definitively expressed its will with regard to storage of spent nuclear fuel in the NWPA. As stated by the District of Columbia Court of Appeals "[i]n the NWPA, Congress created a comprehensive scheme for the interim storage and permanent disposal of high-level radioactive waste generated by civilian nuclear power plants." Indiana Michigan Power Co. v. Dep't of Energy, 88 F.3d 1272, 1273 (D.C. Cir. 1996)(emphasis added). The Department of Energy ("DOE") agrees that the NWPA is the comprehensive Congressional plan for the disposal of nuclear waste. See DOE Final Interpretation of Nuclear Waste Acceptance Issues, 60 Fed. Reg. 21793 (1995) (describing the NWPA as a "comprehensive framework for disposing of high level radioactive waste and spent nuclear fuel"). The NWPA expressly provides that its purposes are:

- (1) to establish a schedule for the siting, construction, and operation of repositories . . . [for the disposal of radioactive waste and spent nuclear fuel];

³ The Commission first promulgated 10 C.F.R. Part 72 prior to the enactment of the NWPA. Although the Commission did consider the question of private off-site, storage in an ISFSI at that time, (see 1980 Release, item 18), the Commission did not consider the effect of the NWPA (which had not been passed) on its authority to license storage of spent nuclear fuel in a 40,000 MTU private, off-site ISFSI. Part 72 of 10 C.F.R. was revised in 1988 to incorporate and reflect certain provisions of the NWPA, including those governing licensing of an MRS. (See Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive waste, 53 Fed. Reg. 31,651 (August 19, 1988). Again, the Commission did not consider the effect of the NWPA on its authority to license a private, off-site 40,000 MTU ISFSI in that release. (See Id.)

(2) to establish the Federal responsibility, and a definite Federal policy, for the disposal of such waste and spent fuel

42 U.S.C. §10131(b)(emphasis added).

To implement this definite federal policy, the NWPA first instructs DOE to propose, obtain a license for, and construct a large scale permanent repository capable of permanently storing the nation's spent nuclear fuel. (42 U.S.C. 10131 et seq.) Aware of public concerns about the safety and feasibility of permanent disposal of spent nuclear fuel, Congress created several limitations on the construction and operation of a permanent repository. Congress limited the size of the first permanent repository to 70,000 MTU. (42 U.S.C. § 10134(d)). In addition, although Congress initially authorized the Commission to consider numerous sites for the proposed repository, in 1987, Congress directed the Commission to consider only a site located at Yucca Mountain, Nevada. (See 42 U.S.C. 10133; General Guidelines for the Recommendation of Site, 61 Fed. Reg. 66159 (1996)). Moreover, Congress conditioned construction of a repository at the Yucca Mountain site on, among other things: (1) the completion by DOE of the site characterizations for the Yucca Mountain Site; (42 U.S.C. § 10133); (2) a determination by DOE that the site is suitable for development as a repository; (Id.) (3) a recommendation of the site from DOE to the President of the United States; (Id.) (4) a recommendation by the President of such site to Congress; (42 U.S.C. § 10134(a)(2)(A)); (5) absence of a notice of disapproval from the Governor of the State of Nevada or, if the Governor does submit a notice of disapproval, passage a resolution of repository siting approval by Congress within ninety days. (42 U.S.C. § 10135(c)); and (6) licensing of the repository by the Commission under applicable guidelines. (42 U.S.C. § 10134(d)).

To deal with spent nuclear fuel prior to the completion of the repository, the NWPA provides for interim storage of such spent fuel in a DOE-operated monitored retrievable storage facility ("MRS"), on-site at nuclear power reactors, and by means of a DOE-sponsored off-site and cooperative storage program. (42 U.S.C. 10151 et seq.; 42 U.S.C. 10161 et seq.) To ensure that use of these interim methods does not continue indefinitely, the NWPA provides that: " (1) following the commencement of operation of a repository, the Secretary [of DOE] shall take title to the high-level radioactive waste or spent nuclear fuel as expeditiously as practical" and that "in return for the payment of fees . . . the Secretary [of DOE], beginning not later than January 31, 1998, will dispose of" the spent nuclear fuel. 42 U.S.C. § 10131(a)(5); see also 42 U.S.C. § 10155(e)(requiring any fuel stored under DOE-operated interim storage program to be removed within three years of the date a repository or monitored retrievable storage facility is available).

In response to political and safety concerns, Congress placed limitations on licensing and construction of an MRS similar to those placed on the permanent repository. First, and most significantly, DOE was not authorized to construct an MRS holding in excess of 15,000 MTU of spent nuclear fuel. (42 U.S.C. § 10168(d)(4)). Even with that comparatively limited capacity, Congress conditioned construction of such a facility on, among other things: (1) express Congressional approval, (42 U.S.C. § 10161(c)(2)); (2) mitigation payments to affected local government units, (42 U.S.C. §§ 10161(f)(2), 10167); (3) state and Indian tribe participation, including the right to disapprove, subject only to Congressional veto (42 U.S.C. §§ 10166(a), 10161(h)); and (4) appointment of a commission to evaluate the need for and effects of such a large centralized facility. (42 U.S.C. § 10163).

Interim storage outside of a DOE-sponsored MRS is governed by Part B of the NWPA, which explains that its purpose is:

(1) to provide for the utilization of available spent nuclear fuel pools at the site of each civilian nuclear power reactor to the extent practical and the addition of new spent nuclear fuel storage capacity where practical at the site of such reactor, and

(2) to provide, in accordance with the provision of this part, for the establishment of a federally owned and operated system for the interim storage of spent nuclear fuel at one or more facilities owned by the Federal Government with not more than 1,900 metric tons of capacity to prevent disruption in the orderly operation of any civilian nuclear power reactor that cannot reasonably provide adequate spent nuclear fuel storage capacity at the site of such reactor when needed.

42 U.S.C. § 10151(b)(emphasis added). Consistent with these purposes, Congress authorized the Commission and DOE to take such action as necessary to "encourage and expedite the effective use of available storage, and necessary additional storage, at the site of each civilian nuclear power reactor." 42 U.S.C. § 10152 (emphasis added). Moreover, in order to expedite interim on-site storage, the interim storage part of NWPA authorizes the Commission to establish procedures for licensing any technology approved by the Commission "for use at the site of any civilian nuclear power reactor." 42 U.S.C. § 10153; see also 42 U.S.C. § 10198 (directing DOE to enter into research partnerships to develop more efficient on-site storage technology).

With regard to the interim storage part's second purpose of providing for a DOE-operated interim storage facility, the NWPA states that "the Secretary shall provide . . . not more than 1,900 metric tons of capacity for the storage of spent nuclear fuel from civilian nuclear power reactors" through one or more of four enumerated methods (none of which involve off-site, private storage). 42 U.S.C. § 10155(a)(1). Because some of the enumerated methods could involve DOE-sponsored off-site storage, the NWPA mandates that, in selecting among the

methods, DOE "shall seek to minimize the transportation of spent nuclear fuel." (42 U.S.C. § 10155(a)(3)). Consistent with the NWPA's overall scheme of temporarily storing spent fuel on-site or at government-sponsored facilities until the establishment of a permanent repository, the NWPA provides that fuel stored by DOE under this Section 10155(a)(1) must be removed within three years of the date a repository or an MRS is available. (42 U.S.C. § 10155(e)). Finally, to clarify any ambiguity as to whether Congress's definitive and comprehensive program for the storage of spent nuclear fuel includes private, away-from-reactor interim storage, the NWPA provides:

Notwithstanding any other provision of law, nothing in this chapter⁴ shall be construed to encourage, authorize or require the private or Federal use, purchase, lease or other acquisition of any storage facility located away from the site of any civilian nuclear power reactor and not owned by the Federal Government on January 3, 1983.

42 U.S.C. § 10155(h)(emphasis added).

The NWPA unambiguously denies the Commission authority to license a private, off-site 40,000 MTU facility under 10 C.F.R. Part 72, or otherwise. As stated above, in reviewing the validity of an agency's construction of a statute or promulgation of regulations, one first asks whether Congress "has spoken unambiguously to the question at hand." Indiana Michigan Power, 88 F.3d at 1274. In this case, neither the AEA nor the NWPA expressly authorizes the Commission to license private, off-site interim storage of spent nuclear fuel. Although the Commission's general licensing authority contained in 42 U.S.C. § 2073 conceivably could have been construed to implicitly authorize the Commission to license storage of spent nuclear fuel

⁴ Note that Section 10155(h) applies to the "chapter"--i.e. the entire NWPA--not just the "section" or "part" in which it is located.

prior to the passage of the NWPA, the NWPA has since indisputably preempted such an interpretation.

In the NWPA, Congress expressly addresses, and sets forth its comprehensive program for, interim storage of spent nuclear fuel. With respect to interim storage, the NWPA directs the Commission and DOE to "encourage and expedite" the effective use of on-site storage capacity. (42 U.S.C. § 10151). It authorizes DOE to enter into research partnerships to develop more effective on-site storage technology and directs the Commission to license such on-site storage technology. (42 U.S.C. §§ 10153, 10198). Furthermore, anticipating the possibility that on-site storage may be inadequate, the NWPA directs DOE to provide 1,900 MTU of storage capacity and propose a DOE-operated MRS for an additional 15,000 MTU of spent nuclear fuel. (42 U.S.C. §§ 10155(a)(1), 101(b) et seq.). Finally, to make clear that Congress's comprehensive interim storage program excludes private, interim off-site storage, the NWPA expressly provides that nothing in the NWPA shall "be construed to encourage, authorize, or require . . . any storage facility located away from the site of any civilian nuclear power reactor and not owned by the Federal Government." 42 U.S.C. § 10155(h).

Furthermore, licensing of a private, off-site, 40,000 MTU ISFSI is incompatible with Congress's desire to ensure that such a large capacity, centralized storage facility would be constructed only if strict safety, financial and political prerequisites were satisfied. In the NWPA, Congress restricted DOE to providing "not more than 1,900 metric tons of capacity" through the various DOE-sponsored or cooperative methods outlined in 42 U.S.C. § 10155 (emphasis added). The monitored retrievable storage facility authorized by Part C of the NWPA was to hold not more than 15,000 MTU of spent nuclear fuel, 42 U.S.C. § 10168(d)(4). Even

with a capacity less than one-half of the proposed PFSF, Congress made sure that a monitored retrievable storage facility could not be constructed absent, among other things: (1) express Congressional approval, (42 U.S.C. § 10161(c)(2)); (2) mitigation payments to affected local government units, (42 U.S.C. §§ 10161(f)(2), 10167); (3) state and Indian tribe participation, including the right to disapprove, subject only to Congressional veto (42 U.S.C. §§ 10166(a), 10161(h)); and (4) appointment of a commission to evaluate the need for and effects of such a large centralized facility. (42 U.S.C. § 10163). Even the proposed permanent repository -- the construction and licensing of which is subject to numerous approvals outlined above -- may not exceed 70,000 MTU of capacity. (42 U.S.C. § 10134(d)). Thus, even if it could be argued that Congress did not bar private, off-site ISFSIs per se when it passed the NWPA, Congress certainly did not place the extensive political, safety, and environmental prerequisites on construction and operation of the 15,000 MTU monitored retrievable storage facility and yet somehow give the Commission permission to license a private 40,000 MTU facility--almost 3 times the size of the MRS--without any such restrictions or prerequisites.

Legislative history regarding the question of interim private, off-site storage of spent nuclear fuel is indeterminate but, to the extent relevant, supports the determination that Congress intended to preclude private, off-site, 40,000 MTU ISFSIs. The official committee reports regarding the NWPA shed no light on Congress's intent with regard to private, large scale off-site storage.⁵ See, e.g. House Report No. 97-491 (1982), reprinted in 1982 U.S.C.C.A.N

⁵ Even if official committee reports did contain statements about the meaning of the NWPA, they would shed very little light on legislative intent. As explained by the Ninth Circuit Court of Appeals:

3792, 3793-94. There was some testimony mentioning off-site storage in the congressional hearings convened years before the NWPA was enacted. In general, however, the "remarks of a single legislator, even the sponsor, are not controlling in analyzing legislative history." Chrysler Corp. v. Brown, 441 U.S. 281, 311 (1979); see also Weinberger v. Rossi, 456 U.S. 25, 35 (1982)("One isolated remark by a single [congressman] . . . is insufficient to establish the kind of affirmative congressional expression necessary to evidence an intent . . ."). To the extent isolated remarks of a legislator or witness at a hearing are relevant, in this case, such remarks reveal only that the question private, off-site storage was hotly contested. (See Statement of U.S. Rep. Butler Derrick Before the Subcommittee on Energy and the Environment Committee on Interior and Insular Affairs, 97th Cong.,, 1st Sess., on H.R. 1993, H.R. 2800, H.R. 2840, H.R. 2888, H.R. 3809 (1981) 315, 318 ("with regard to interim storage at spent nuclear fuel in away from reactor (AFR) storage pool, I remained opposed . . ."); Testimony of David Berrick, Environmental Policy Center, id., 334, 337 (acknowledging hot dispute about away from reactor storage)). One revealing fact is that, while some early versions of the numerous bills that were amalgamated into the NWPA contained provisions supporting private,

The legislative history suffers from the usual infirmity, that it was not passed by both houses of Congress and signed into law by the President. For that reason, it is not the law. The staff person who wrote the House committee's legislative history might have represented accurately what all the House committee members meant to say in the bill but did not Alternatively, the staff person might have been assigned to write what some committee members wanted in the bill but did not get, or to throw a bone to some pro-privacy lobbying whose preferred language was rejected by the House committee Legislative history need not be written with the same care, or scrutinized by those skeptical of the statute with the same care as statutory language. There is no way for a House or Senate member outside the relevant committee to vote against legislative history.

Puerta v. United States, 121 F.3d 1338, 1344 (9th Cir. 1997).

off-site storage (see, e.g. H.R. 6598, as reported from the Subcommittee on Energy Conservation and Power, July 8, 1982, § 135 (utilities permitted to enter into contracts with DOE only if pursuing alternatives including off-site storage)), the bill passed by Congress and signed by the President contained no such provisions. To the contrary, the bill enacted into law as the NWPA provides that "nothing in this chapter is shall be construed to . . . authorize" private, off-site storage.

To the extent the NWPA is not interpreted to unambiguously and expressly prohibit private, off-site storage, the second step of the inquiry asks whether the Commission's licensing of an off-site ISFSI under 10 C.F.R Part 72 would be "reasonable and consistent with the statute's purpose." Indiana Michigan Power, 88 F.3d at 1274. PFS is applying to the Commission for a license to operate an off-site, private facility storing up to 40,000 MTU of spent nuclear fuel; moreover, PFS anticipates continually storing fuel at the PFSF even after a permanent repository is completed. Licensing such a facility is clearly not "reasonable and consistent" with both the language and purpose of the NWPA.

As detailed above, the NWPA establishes a comprehensive and exclusive program for the storage of spent nuclear fuel, which program speaks exclusively in terms of private on-site storage and DOE-initiated off-site storage. In direct conflict with this program, the proposed PFSF would be a private, off-site facility, storing 40,000 MTU of spent fuel. To the extent off-site storage is permitted by the NWPA, it must be sponsored by DOE and must be designed to minimize transportation of spent nuclear fuel; in contrast, the Application proposes to ship thousands of tons of spent nuclear fuel thousands of miles across the country to a private facility in a State that does not even contain a nuclear power facility. The scheme outlined in the

NWPA clearly contemplates elimination of most off-site storage within a few years of the completion of a permanent repository; in contrast, the Application seeks a twenty year initial permit and contemplates a twenty year renewal--even if a permanent repository is available. The NWPA places strict safety, financial, and political requirements on the licensing and construction of large, centralized facilities; in contrast, the Application seeks to bypass all but this licensing process for a facility two and one-half times the MRS authorized by Congress. Finally, the NWPA expressly provides that its comprehensive program shall not include any storage facility except one located on the site of a nuclear reactor or on a site owned by the federal government; in direct conflict with this provision, PFS seeks a license for a facility that is neither located on the site of a nuclear reactor nor owned by the federal government.

The proposed PFSF is "fundamentally at odds with the manifest congressional design," Western National, 65 F.3d at 94, and thoroughly "inconsistent with congressional intent" Webb, 878 F.2d at 1255, as set forth in the NWPA. A "regulation must be interpreted so as to harmonize with and further and not to conflict with the objective of the statute it implements." Emery Mining Corp. v. Secretary of Labor, 744 F.2d 1411, 1414 (10th Cir. 1984)(citation omitted); see also Id. ("where there is an interpretation of an ambiguous regulation which is reasonable and consistent with the statute, that interpretation is to be preferred"). Since the licensing of a private, off-site 40,000 MTU facility is clearly inconsistent with the intent of the NWPA and AEA, in order to be consistent with the NWPA and AEA, 10 C.F.R. Part 72 must be interpreted not to countenance the Application for the PFSF. Accordingly, 10 C.F.R. Part 72 must be deemed inappropriately invoked in this Proceeding, and the Proceeding must be terminated.

III. Special Circumstances Require Waiver or Reconsideration of The Waste Confidence Decision.

A. Waste Confidence Decision.

In 1984, the Commission initially promulgated, and in 1990 the Commission revised and affirmed, the so-called Waste Confidence Decision. (See Review and Final Revision of Waste Confidence Decision, 55 Fed. Reg. 38,474 (September 18, 1990)(the "1990 Release)). The substance of the Waste Confidence Decision has been incorporated into 10 C.F.R. § 51.23, which provides:

The Commission has made a generic determination that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the license for operation . . . of that reactor at its spent fuel storage basin or at either onsite or offsite independent spent fuel storage installations. Further, the Commission believes there is reasonable assurance that at least one mined geologic repository will be available within the first quarter of the twenty-first century, and sufficient repository capacity will be available within 30 years beyond the licensed life for operation of any reactor to dispose of the commercial high-level radioactive waste and spent fuel originating in reactors and generated up to that time.

Accordingly,. . . within the scope of the generic determination in paragraph (a) of this section no discussion of any environmental impact of spent fuel storage . . . in independent spent fuel storage installations (ISFSI) for the period following the term of the . . . initial ISFSI license or amendment for which application is made, is required in any environmental report, environmental impact statement, environmental assessment or other analysis prepared . . . in connection with the issuance of an initial license for storage of spent fuel at an ISFSI, or any amendment thereto.

(10 C.F.R. §51.23). (The Waste Confidence Decision and Section 51.23 are collectively referred to as the "Confidence Decision"). With respect to the Waste Confidence Decision, the 1990 Release Provides:

This would not, however, disturb the Commission's original commitment to review its Decision whenever significant and pertinent unexpected events occur. The Commission anticipates that such events as a major shift in national policy, a major unexpected institutional development, and/or new technical information might cause the Commission to consider reevaluating its Waste Confidence Findings

(Id.).

B. Review of the Generic Determination Regarding a Repository.

Significant and pertinent unexpected events have occurred that make reconsideration of the Waste Confidence Decision and 10 C.F.R. § 51.23 necessary as part of this Proceeding. At this time, the only site DOE can legally consider for a permanent repository is Yucca Mountain. (See 42 U.S.C. § 10133). In 1992, a 5.6 magnitude earthquake 8 miles from Yucca Mountain affected the Yucca Mountain site enough to cause \$1 million worth of damages at the DOE field office and to raise serious questions about the geologic stability of the site. (See Allen Affidavit ¶ 5). Researchers recently found unexpected traces of radioactive chlorine-36 produced during the atmospheric bomb tests deep inside of Yucca Mountain, suggesting that there are fast pathways for carrying corrosive water down to the repository level. (See Allen Affidavit ¶ 6). Moreover, researchers at the nearby Nevada Testing Site have determined that plutonium from test explosions in the 1950's migrated into nearby ground water attached to very small mineral particles, suggesting that water contaminated at repository may quickly flow into, and contaminate, surrounding groundwater. (See Allen Affidavit ¶¶ 7, 8).

The Nuclear Waste Policy Act of 1997 (the "1997 NWPA"), which passed the Senate by a wide margin and is expected to do the same in the House, provides for the construction of a large, government sponsored, centralized interim spent fuel storage facility by 2003. (See Allen Affidavit ¶ 9). This facility will certainly displace the funding, and perceived need, for a permanent geological repository within the foreseeable future. In addition, the governor of Nevada, who has a right to veto the proposed repository, has publicly announced his opposition to a permanent repository in the State of Nevada. (See 42 U.S.C. 10135(c); Allen Affidavit

¶ 10). Finally, DOE has repeatedly failed to meet mandatory deadlines with respect to the storage of spent nuclear fuel, and is about to fail to fulfill its statutory obligation to take possession of spent nuclear fuel subject to NWPA-mandated contracts on January 31, 1998. (See 42 U.S.C. § 10222(a)(5)(B); Northern States Power Co. v. Dep't of Energy, 1997 WL 705072 (D.C. Cir.) (November 14, 1997)). In fact, in the ongoing litigation concerning DOE's inability to timely assume possession of spent nuclear fuel, DOE has taken the position before the United States Court of Appeals for the District of Columbia that it is "uncertain[] as to when DOE will be able to begin spent fuel acceptance." Northern States Power Co., at *3. When the agency responsible for constructing the permanent repository has judicially admitted that it cannot determine when such a repository will be available, it (and other involved agencies) should be judicially estopped from taking a contrary position. Each of these events is significant, unexpected, casts doubt on the conclusion that "at least one mined geological repository will be available within the first quarter of the twenty-first century," and has occurred since the Commission's last formal review of the Waste Confidence Decision in 1990. The Commission has committed to review the Waste Confidence Decision whenever "significant and pertinent" events occur, and accordingly, must review the Waste Confidence Decision as part of this Proceeding.⁶

⁶ In Northern States Power Co., DOE suggested that one reason for its failure to timely assume the spent nuclear fuel subject to NWPA contracts was that "[t]he Administration continues to believe that interim storage siting should not proceed until the Department has the benefit of the information resulting from the Yucca Mountain Project Viability Assessment." Norther States Power Co., 1997 WL 705072 at *3. The Administration and DOE recognize that the viability of the Yucca Mountain permanent repository is presently in doubt and desires to delay any decisions regarding interim storage until the viability assessment is complete. The Commission should similarly recognize the questionable status of the Yucca Mountain permanent repository and defer this Proceeding until the major document affecting the reasonableness of

C. Special Circumstances Require Waiver of the Analysis Limitations in the Confidence Decision.

Even if a permanent repository is constructed, because of the unprecedented size of the proposed PFSF, the repository will not be able to timely absorb the spent nuclear fuel to be stored therein at the end of the license period, or within a reasonable period thereafter. Thus, to the extent the Confidence Decision permits PFS to limit its environmental impact analysis to fewer than seventy-five years, permits PFS to assume that decommissioning will occur before year 2075, permits PFS to assume that all fuel stored in the proposed PFSF will timely be received by a permanent repository or other facility, or permits PFS to assume that at least limited amounts of spent fuel will not remain at the facility for forty years after termination of its license, the Confidence Decision must be waived for this Proceeding.

As outlined above, the proposed PFSF is designed to store up to 40,000 MTU of spent nuclear fuel from commercial reactors for up to 40 years, at which time PFS asserts that all of the spent fuel will have been transferred off-site, and the facility will be ready for decommissioning. The only site DOE can legally consider for a permanent repository is Yucca Mountain. (See 42 U.S.C. § 10133.) It is estimated that the proposed permanent repository, if constructed, will at the very earliest, be operational in year 2010. See Northern States Power Co. 1997 WL 705072 at *3. More realistic reports suggest that, if ever completed, the repository will not be operational until 2023. (GAO/T-RCED-93-58, Yucca Mountain Project Management and Funding Issues, statement of Jim Wells (1993)). A queue has been established for the first ten years of repository operation. (See Allen Affidavit ¶ 11). Seven thousand

the Waste Confidence Decision--the Yucca Mountain Viability Assessment--is complete.

MTU, of the total 70,000 MTU of spent nuclear fuel, to be stored at the repository will be government-generated spent nuclear fuel from the Navy Nuclear Propulsion Program and similar sources. (Id. ¶ 12). Once the repository is operating, it is projected to receive no more than 900 MTU of spent nuclear fuel per year. (Id. ¶ 11). Thus, even assuming that the permanent repository were constructed in 2010 and received only fuel from the PFSF, it would be year 2054 (44 years at 900 MTU) before the repository could receive all of the fuel stored at the proposed PFSF. If one factors in the existence of a queue for the first ten years of operation, the fact that a least 7,000 MTU of capacity at the repository is dedicated for federal government purposes, and the likelihood that fuel from numerous sources will compete for the repository's remaining 63,000 MTU of capacity, it becomes clear that the repository will not be able to absorb all of the fuel stored at the proposed PFSF until at least the last quarter of the twenty-first century--if at all.

This inability of the repository to timely absorb all spent fuel at the PFS will increase the costs of removing spent fuel, increase decommissioning costs, and create an extended (and possibly heightened) impact on the environment. Moreover, continued operation of the PFSF well beyond the planned date of decommission will have significant safety ramifications. PFS's proposed budget, service contracts (to the extent discernible from PFS's brief summary), and decommissioning plan do not provide funds for a super-extended operating or decommissioning period. A shortfall of funds could lead to shortcuts and related safety problems. (See Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), 30 N.R.C. 121, 1989 NRC LEXIS 39 *29-30 (1989) (acknowledging a nexus between financing shortages and safety

problems). Also, the possibility of human error, cask degradation, and external events affecting the PFSF increase as decommissioning is delayed.

The unprecedented size of the proposed PFSF, combined with its private ownership, constitute special circumstances requiring waiver of the Confidence Decision in this Proceeding. The Confidence Decision concludes that "sufficient repository capacity will be available within 30 years beyond the licensed life for operation of any reactor" to dispose of the spent fuel generated therein. (See 10 C.F.R. § 51.23). Based on this determination, and the implicit assumption that said repository can timely received all fuel stored at a temporary facility, the Confidence decision further provides that "no discussion of any environmental impact of spent fuel storage . . . in independent spent fuel storage installations (ISFSI) for the period following the term of the . . . initial ISFSI license . . . is required." (10 C.F.R. § 51.23(b)). In this Proceeding, PFS is seeking a license for a purported ISFSI of unprecedented size and capacity-- up to 40,000 MTU of spent nuclear fuel. The unique size, scope, and non-public nature of the proposed PFSF present special circumstances making application of the Confidence Decision inappropriate.

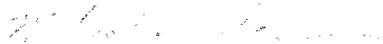
As explained and evidenced above, the proposed repository will not be able to receive all of the spent fuel stored at the proposed PFSF until year 2054 at the earliest, and more realistically, until the end of the twenty-first century. The above-described facts conclusively negate any generic finding that PFS will be able to remove all fuel from the facility and complete decommissioning at the end of this, or even a second, twenty year licensing period.

The possibility of an application for a 40,000 MTU private storage facility was not considered by the Commission when it issued the Waste Confidence Decision and raises serious

safety concerns. Accordingly, the Waste Confidence Decision and 10 C.F.R. § 51.23 should be waived in this proceeding, to the extent either permits PFS to limit its environmental impact analysis to fewer than seventy-five years, permits PFS to assume that decommissioning will occur before year 2075, permits PFS to assume that the PFSF will not continue to store at least limited quantities of fuel for forty years beyond expiration of its license, or permits PFS to assume that all fuel stored in the proposed PFSF will timely be received by a permanent repository.

Dated this 21st day of January, 1998.

Respectfully submitted,



Michael M. Later, USB #3728

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DOCKETED
10/16

Certificate of Mailing

I hereby certify that I caused to be sent by E-Mail and U. S. Express Mail a copy of the foregoing Petition of Castle Rock Land & Livestock, L.C., Skull Valley Co., Ltd, and Ensign Ranches of Utah, L.C. for Non-Application or Waiver of Commission Regulations, Rules, and General Determinations to the following:

NOV 22 P5:25
U.S. NUCLEAR REGULATORY COMMISSION
ADMINISTRATIVE JUDGE

Dr. Jerry R. Kline
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
E-Mail: jrk2@nrc.gov

Dr. Peter S. Lam
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
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E-Mail: psl@nrc.gov

G. Paul Bollwerk, III, Chairman
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
E-Mail: gpb@nrc.gov

Office of the Secretary
ATTN: Rulemakings and Adjudications Staff
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001
(U. S. Mail only)

James M. Cutchin
Atomic Safety and Licensing Board Panel
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001
E-Mail: jmc3@nrc.gov
(and U.S. Mail)

and also certify that I caused to be sent by E-Mail and Federal Express overnight courier service, a copy of the foregoing to the following:

Attn: Docketing & Services Branch
Secretary of the Commission
U.S. Nuclear Regulatory Commission
Mail Stop: 016G15
11555 Rockville Pike One White Flint North
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U.S. Nuclear Regulatory Commission
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Jean Belille, Esq.
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Boulder, Colorado 80302
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and also certify that I caused to be sent by E-Mail and hand delivery, a copy of the foregoing to the following:

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E-Mail: cnakahar@state.ut.us

Dated this 21st day of January 1998.



DeAnn Thompson

provides that PFS seeks to have the proposed PFSF licensed as an ISFSI pursuant to 10 C.F.R. Part 72.

4. Attached hereto as Exhibit B is a true and correct copy of Section 1.1 of the Emergency Plan (the "EP") submitted as part of the Application, which provides in part, that the proposed PFSF is designed to store spent fuel containing up to 40,000 metric tons of uranium from commercial reactors. Section 1.1 of the EP also provides that the proposed PFSF is designed to store spent fuel for up to 40 years, at which time spent fuel will have been transferred off-site, and the PFSF will be ready for decommissioning. Section 1.1 of the EP further provides that the Application is for a twenty year license; nevertheless, the PFS intends to file an application for license renewal for an additional 20 year term, if necessary.

5. Attached hereto as Exhibit C is a true and correct copy of Earl Lane, The Leftovers of a Nuclear Age, Newsday, August 4, 1997, at A07, which provides in part that in 1992, a 5.6 magnitude earthquake 8 miles from Yucca Mountain affected the Yucca Mountain site and caused one million dollars worth of damages at the DOE field office.

6. Attached hereto as Exhibit D is a true and correct copy of Earl Lane, The Leftovers of a Nuclear Age by Earl Lane, published in Newsday on August 3, 1997, at A04, which provides in part that researchers recently found unexpected traces of radioactive chlorine-36 produced during the atmospheric bomb tests deep inside of Yucca Mountain, suggesting that there are fast pathways for carrying water down to the repository level.

7. Attached hereto as Exhibit E is a true and correct copy of Keith Rogers, Plutonium Found In Water, Las Vegas Review-Journal, September 11, 1997, at 1A, which provides in part that researchers at the Nevada Test Site believe that plutonium from test

explosions in the 1950's migrated into nearby ground water attached to very small mineral particles.

8. Attached hereto as Exhibit F is an abstract to an work in progress by Annie B. Kersting and Joseph L. Thompson, entitled Near Field Migration of Radionuclide in the Subsurface at the Nevada Test Site, which provides:

Our ability to characterize and mitigate contamination of radionuclides in the subsurface is limited by our understanding of the mechanisms and major pathways for transport. There is strong evidence that particles and colloids (< 1 um) are ubiquitous in groundwater and that they have the potential to enhance the transport of contaminants that strongly sorb to the solid phase. In order to investigate the migration of radionuclides via colloids we carried out a series of filtration experiments using groundwater pumped from wells downgradient from an underground nuclear test event. We analyzed unfiltered groundwater, colloidal material caught on a series of filter sizes, and the ultrafiltrate for gamma-emitting radionuclides and tritium. Tritium, ⁶⁰Co, ¹³⁷Cs, ^{152,154,155}Eu and Pu isotopes were detected in the unfiltered groundwater samples. Most of the activity was caught on the filters; the ultrafiltrate had only a few percent of the radionuclides other than tritium. The colloidal material consists of zeolites (mordenite), clays (illite), and cristobalite (SiO₂). These minerals are consistent with the lithology of the host aquifer (volcanic tuff). We conclude that radionuclides can and do bind to colloids that then may be transported significant distances in the saturated zone.

9. Attached hereto as Exhibit G is a true and correct copy of Section 205 of The Nuclear Waste Policy Act of 1997, 105th Cong., 1st Sess. Senate Bill 104, Version 4, as passed the United States Senate on April 15, 1997.

10. Attached hereto as Exhibit H is a true an correct copy of Kenneth J. Garcia et al., Fighting for Lethal Leftovers, San Francisco Chronicle, April 13, 1995, at A1.

11. Attached hereto as Exhibit I is a true and correct copy of DOE/RW-1457, Department of Energy Annual Capacity Report (OCRWM: March 1995), which in part describes the order in which spent nuclear fuel will be accepted at a proposed permanent repository for the disposal of spent nuclear fuel for the first ten years of operation. In addition, the report

provides for spent nuclear fuel to be received at a rate of no more than 900 metric tons of uranium per year.

12. Attached hereto as Exhibit J is a true and correct copy of DOE, Summary of Public Scoping Comments Related to the Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High -Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (May 1997), which provides in part that 7000 MTU, of the total 70,000 MTU, of spent nuclear fuel to be stored at a proposed permanent repository for the disposal of spent nuclear fuel will be government-generated spent nuclear fuel from the Navy Nuclear Propulsion Program and similar sources.

Dated this 21st day of January, 1998.

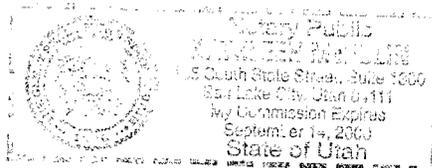
[Signature]
Bryan T. Allen

SUBSCRIBED AND SWORN TO before me this 21st day of January, 1998

[Signature]
NOTARY PUBLIC
Residing at Starbuckley

MY COMMISSION EXPIRES:

September 14, 2000



ATTACHMENT A

CHAPTER 1

GENERAL AND FINANCIAL INFORMATION

1.1 APPLICATION FOR LICENSE

Private Fuel Storage L.L.C. (PFSLLC) proposes to construct and operate an Independent Spent Fuel Storage Installation (ISFSI) at an away from reactor site located on the Skull Valley Indian Reservation in Tooele County, Utah. The Private Fuel Storage Facility (PFSF) site is located approximately 27 miles west-southwest of Tooele City in the center of Skull Valley, 1.5 miles west of Skull Valley Road. The site location is shown in Figure 1-1.

The function of the PFSF will be to store nuclear fuel that has been discharged from U.S. commercial nuclear generating plants. Spent fuel will be transported to Utah by rail. One of two alternatives will be selected for transport between the railroad main line and the PFSF site. The shipping cask will either be off-loaded at an intermodal transfer point at the railroad main line and loaded onto a heavy haul tractor/trailer for transporting to the PFSF, or the shipping cask will be transported via a new railroad spur connecting the PFSF directly to the railroad main line.

Multi-purpose canisters will be utilized for both the shipping casks and storage casks. No handling of bare fuel will occur at the PFSF since operations will be limited to handling of sealed canisters. The project will operate under a "start clean, stay clean" (contamination free) philosophy which will serve to minimize the possibility of transporting any externally contaminated canisters to the PFSF. The canisters will be stored at the PFSF in a vertical configuration inside concrete storage casks, which will be stored on concrete pads in a protected area of the site.

This license application for the proposed PFSF has been prepared in accordance with 10 CFR Part 72 and the guidance provided in NRC Regulatory Guide 3.50, "Standard Format and Content for a License Application to Store Spent Fuel and Radioactive Waste", Rev. 1, September 1, 1989. The License Application consists of the following parts:

- (a) The License Application including the Proposed Technical Specifications and Preliminary Decommissioning Plan, as required by 10 CFR 72.26 and 10 CFR 72.30, respectively, which are set out herein.
- (b) The technical information outlined in a Safety Analysis Report as required by 10 CFR 72.24 which is enclosed in a separate document entitled "Private Fuel Storage Facility Safety Analysis Report" forwarded herewith and made a part hereof.
- (c) The emergency planning information required by 10 CFR 72.32 which is contained in a separate document entitled "Private Fuel Storage Facility Emergency Plan" forwarded herewith and made a part hereof.
- (d) Environmental information required by 10 CFR 72.34 and 10 CFR 51, Subpart A, which is contained in a separate document entitled "Private Fuel Storage Facility Environmental Report" forwarded herewith and made a part hereof.
- (e) Physical safeguards information required by 10 CFR 72, Subpart H which is contained in a separate document entitled "Private Fuel Storage Facility Security Plan". The Security Plan is forwarded under separate cover in accordance with 10 CFR 72, Subpart H and is made a part hereof.

Operations at the originating reactors in preparation or support of spent fuel shipments to the PFSF are performed under the individual reactor's license. Such activities include loading spent fuel into the canisters, seal welding the canisters, and transferring the canisters into shipping casks. Any changes to the reactor licensee's facilities or procedures in order to accommodate these activities will be the responsibility of the individual licensee, and are not a part of this License Application.

Transportation of the spent fuel shipping casks from the originating reactor to the PFSF will occur in accordance with 10 CFR 71 and the originating reactor's license, and is not a part of this License Application.

1.2 NAME OF THE APPLICANT

Private Fuel Storage L.L.C.

1.3 ADDRESS OF APPLICANT

Private Fuel Storage L.L.C.
PO Box C4010
La Crosse, WI 54602-4010

1.4 DESCRIPTION OF BUSINESS OF APPLICANT

PFSLLC is a limited liability company owned by eight U.S. utilities which serve more than 17 million customers in 21 states. Its headquarters are in La Crosse, Wisconsin.

In 1996, the member utilities provided electrical energy to over 17 million customers in the states of Wisconsin, Minnesota, New York, Iowa, Michigan, Illinois, Pennsylvania,

New Jersey, West Virginia, Ohio, Indiana, Virginia, Kentucky, Tennessee, North Dakota, South Dakota, Alabama, Mississippi, Georgia, Florida, and California. The operating revenue for the member utilities in 1996 totaled \$37 billion.

1.5 LEGAL STATUS AND ORGANIZATION

PFSLLC is a limited liability company organized and existing under the laws of the state of Delaware with its principle office located in La Crosse, Wisconsin, at the address stated above. It is registered and authorized to transact business in the state of Utah.

PFSLLC is not owned, controlled, or dominated by any alien, a foreign corporation, or foreign government. The names of PFSLLC directors and principal officer, all of whom are citizens of the United States, are provided at the end of this chapter.

1.6 FINANCIAL QUALIFICATIONS

A financing plan has been developed which ensures that the PFSLLC has reasonable assurance of obtaining the necessary funds to construct, operate and decommission the PFSF. Several mechanisms will be used, including equity contributions from PFSLLC members pursuant to Subscription Agreements, pre-shipment customer payments pursuant to Service Agreements (through which the customers of the PFSLLC commit to store their spent fuel at the PFSF and the PFSLLC agrees to provide the customers with storage services), and annual storage fee payments pursuant to Service Agreements. The PFSLLC is also retaining the option of obtaining portions of the construction funds through the sale of debt securities secured by the Service Agreements.

The PFSF project has been developed on a phased basis. Steps I and II, which involved preliminary investigations, predated the formation of the PFSLLC. Step III began with the formation of the PFSLLC and concluded with the filing of the License Application. This step was funded by direct payments to the PFSLLC from member utilities pursuant to Subscription Agreements. Step IV includes the NRC licensing proceeding as well as detailed design and preparation of bid specifications. The budget for Step IV is approximately \$10 million, including contingencies, to be funded by direct payments to the PFSLLC from the member utilities pursuant to Subscription Agreements. These Step IV payments will be made on a quarterly basis. Given the relatively small size of this payment for any participating utility, there is the reasonable assurance that the PFSLLC will obtain Step IV funding.

Step V represents the construction of the PFSF. The budget for this phase is \$100 million and includes site preparation; construction of the access road, administration building, visitors center, security and health physics building, operations and maintenance building, canister transfer building and storage pads; procurement of canister transfer and transport equipment; and transportation corridor construction. The Step V budget also includes necessary personnel costs, licensing fees, and host benefits, as well as a contingency amount.

Step V will be funded through several mechanisms. An additional \$6 million in equity contributions is planned from PFSLLC members pursuant to Subscription Agreements. The bulk of the Step V costs is expected to be funded through Service Agreements with PFSF customers (including both PFSLLC members and non-members). Payments under each Service Agreement will be spread out over the period of time from construction through spent fuel delivery. No construction will proceed unless Service Agreements committing for a significant quantity of spent fuel storage have been signed. The nominal target is 15,000 MTU of storage commitments. Raising the non-

equity portion of Step V costs through Service Agreements will allow the PFSLLC to avoid financing costs for construction. The PFSLLC, however, retains the option to finance the non-equity portion of Step V costs through debt financing secured by Service Agreements. As with direct financing from customers, no construction will take place without the commitment through Service Agreements for a significant quantity of spent fuel storage. Unless PFSLLC members and non-members have committed to a significant quantity of storage, construction of the PFSF will not begin. Thus, there will be reasonable assurance that the PFSLLC will obtain Step V funding.

Step VI, the operational phase of the PFSF, will also be funded through the Service Agreements. The significant costs of this phase will include procurement and/or fabrication of canisters (\$432 million) and storage casks (\$134 million). These components will be obtained on an as-needed basis, to coincide with the schedule for moving spent fuel to the PFSF. All capital costs associated with the storage of any spent fuel will be paid by the customer pursuant to the Service Agreement prior to the acceptance by the PFSLLC of that spent fuel. Since the PFSF will not accept spent fuel for storage without prior payment through Service Agreements of the necessary capital costs for transportation and storage, there is reasonable assurance that the PFSLLC will obtain the necessary Step VI costs.

The on-going operations and maintenance cost for spent fuel in storage at the PFSF will be paid by the customer on an annual basis as required by the Service Agreements. The annual operations and maintenance cost is estimated to be \$49 million for a 20 year facility operating life and \$31 million for a 40 year life. The Service Agreements will provide assurance for the continued payment of these costs by requiring the customers to provide annual financial information, meet creditworthiness requirements, and , if necessary, provide additional financial assurances (such as an

advance payment, irrevocable letter of credit, third-party guarantee, or a payment and performance bond).

1.7 DECOMMISSIONING FUNDING ASSURANCE

The PFSF will be operated under a "start clean, stay clean" philosophy, with contractual obligations in the Service Agreement with each customer and PFSF administrative procedures to assure that no radioactive contamination is introduced into the facility. Thus the intention is to maintain the PFSF free of radiological contamination at all times. During the operational phase of the facility, all radioactive contamination will be removed immediately upon its discovery. The cost estimate for decommissioning nonetheless conservatively assumes that certain areas and components will require decontamination.

The method of funding decommissioning activities consists of two components: storage cask decommissioning and decommissioning for the remainder of the facility. The costs for decommissioning each storage cask is estimated at \$17,000. This amount will be prepaid into an externalized escrow account under the Service Agreement with each customer, prior to shipment of each spent fuel canister to the PFSF. The full amount of potential decommissioning costs will thus be collected in a segregated account prior to the receipt of each spent fuel canister at the PFSF. This method of funding provides for prepayment of the storage cask decommissioning costs prior to any potential exposure of the storage cask to radiation or radioactive material, and therefore prior to the need for any decommissioning. As storage cask decommissioning is completed, the amount of funds in the escrow account will be adjusted periodically to reflect the remaining decommissioning efforts. This method of funding complies with the requirements of 10 CFR 72.30(c)(1).

The costs of decommissioning the remainder of the facility and site is estimated to be \$1,631,000, which will be funded through a letter of credit coupled with an external sinking fund. Customers will be required under the Service Agreements to pay the costs to decontaminate any portion of the facility for which they may be responsible for contaminating. As the actual costs of decontamination and decommissioning are paid into the external sinking fund, the letter of credit will be reduced by an equivalent amount. This funding method complies with the requirements of 10 CFR 72.30(c)(3).

The per-canister fee and the amounts of the escrow account, external sinking fund and letter of credit will be reviewed and adjusted annually to account for inflation and any changes in the scope or cost of decommissioning. The escrow account, letter of credit and external sinking fund will be established in conformance with the guidance of NRC Regulatory Guide 3.66.

1.8 SITE LOCATION AND COMPLETION DATES

The proposed PFSF is located on the Skull Valley Indian Reservation which is within Tooele County, Utah, 27 miles west-southwest of Tooele City. The site is located 1.5 miles west of the Skull Valley Road. It is anticipated that the PFSF will be issued a specific license to receive, transfer and possess spent fuel in accordance with the requirements of 10 CFR 72 prior to January 1, 2000. Construction of the PFSF is scheduled to start on January 1, 2000, with completion by December 31, 2001. The construction and preoperational testing will be completed in time to allow operation of the facility in 2002.

1.9 RESTRICTED DATA

This application does not contain any Restricted Data or other defense information, and

ATTACHMENT B

CHAPTER 1

FACILITY DESCRIPTION

1.1 FACILITY PURPOSE

The purpose of the Private Fuel Storage Facility (PFSF), is to provide for safe and cost-effective storage of spent nuclear fuel from numerous nuclear reactors in the United States at a single, centralized location.

A consortium of utilities, through the Private Fuel Storage L.L.C. (PFSLLC), have joined in a cooperative agreement with the Skull Valley Band of Goshute Indians (Band) to undertake the development, licensing, construction, and operation of the PFSF. The PFSF will be built on the Skull Valley Indian Reservation and will provide timely, centralized, cost-effective spent fuel storage capacity to meet the needs of the utilities and provide long-term, stable financial income, employment, and training opportunities for Band members. The PFSF will adopt a "Start Clean / Stay Clean" philosophy in order to preserve the site and surrounding environment and to permit utilization of the land and all buildings constructed in this project for other traditional industrial uses after the facility is decommissioned.

The PFSF is designed to store spent fuel from commercial nuclear reactors in sealed metal canisters, containing up to 40,000 Metric Tons of Uranium¹ (MTU), which will require approximately 4,000 storage casks. The PFSF will utilize a dry cask storage technology, which is currently in use at several operating nuclear reactors in the United States and abroad. Dry cask storage safely stores spent nuclear fuel inside sealed

¹ Metric Tons of Uranium (initial uranium). This includes the small amount of mixed oxide fuels that are anticipated to require storage.

canisters rather than in a spent fuel pool. The canister-based system produces negligible radioactive waste and therefore is compatible with the PFSF "Start Clean / Stay Clean" philosophy. This technology is also compatible with the long-term plans of the DOE interim storage facility and permanent repository. The PFSF is designed to store spent fuel for up to 40 years, at which time all of the spent fuel will have been transferred off-site and the facility will be ready for decommissioning. The initial request for a license is for a term of 20 years. Prior to the end of the initial license term, an application for license renewal will be submitted for an additional 20 year term, if necessary.

The PFSF is required to be licensed by the NRC in accordance with 10 CFR 72 (Reference 1). As part of the license application, this Emergency Plan has been prepared to comply with 10 CFR 72.24(k) and 72.32(a).

1.2 FACILITY LOCATION

The Skull Valley Indian Reservation is located in Tooele County, in northwestern Utah, approximately about 27 miles west-southwest of Tooele City². The location of the PFSF and a map of the general area surrounding the PFSF are shown in Figure 1-1. Figure 1-2 is a U.S. Geological Survey map showing the Skull Valley Indian Reservation and surrounding areas.

The PFSF is located in the northwest corner of the Skull Valley Indian Reservation, Tooele County, Township 5 South, Range 8 West, all of Section 6, and portions of adjacent Sections 5, 7, and 8. Interstate Highway 80 and the Union Pacific Railroad mainline are approximately 24 miles north of the PFSF site. The Skull Valley Road runs from Interstate 80 past the reservation.

² Tooele City is used to distinguish the City of Tooele from Tooele County.

1.3 AREA NEAR THE SITE

The PFSF site is situated in the northwest corner of the Skull Valley Indian Reservation, as shown in Figures 1-1 and 1-2. The PFSF is accessed by a new road from the Skull Valley Road as shown on Figure 1-3, the PFSF Site Plan. The reservation consists of approximately 18,000 acres, of which the PFSF site area is approximately 820 acres. The Skull Valley Band of Goshute Indian village is approximately 3.5 miles east-southeast of the PFSF site. This village consists of several community buildings and has about 30 residents.

The Skull Valley generally runs north and south, bounded by the Cedar Mountains to the west and by the Stansbury Mountains to the east. The land in the Skull Valley is extremely arid, characterized by some grasses, cactus, shrubs and rock outcroppings, with very little agricultural usage. There is some cattle grazing in Skull Valley.

The area surrounding the PFSF site is very sparsely populated. Terra, a small residential community with a population of 120 (Reference 2), is located 10 miles east-southeast of the PFSF. The nearest town is Dugway, approximately 12 miles south of the PFSF, with a population of approximately 1,700 (Reference 2). There are no towns between the PFSF and Interstate 80, 24 miles north of the PFSF. The largest population center in the area is Tooele City, the county seat of Tooele County, with a population of approximately 15,200 (Reference 2). This city is approximately 27 miles east-northeast of the PFSF, on the east side of the Stansbury Mountains. Residents of Tooele County work for a variety of employers, including military installations (Deseret Chemical Depot, Dugway Proving Ground and Tooele Army Depot), agricultural, mining and various public and private sector enterprises.

All Tooele County law enforcement, fire and emergency medical services are dispatched from the Tooele County Sheriff's Dispatch Center, located in the Tooele County Courthouse in Tooele City, as described in the Tooele County Emergency Operations Plan (Reference 3). Because of the intervening Stansbury Mountains, it is a drive of approximately 55 miles from Tooele City to the PFSF, with the north route completely around the mountain range, and the south route through the mountains, by means of Johnson Pass.

The Tooele Valley Medical Center, which has about 38 beds and is equipped to provide decontamination and ambulance services, is located in Tooele City. An ambulance procured by the PFSF will be stationed at the PFSF to expedite transporting any seriously injured personnel to Tooele Valley Medical Center, as necessary.

In order to enhance the response to fires, two fire trucks procured by the PFSF will be available for rapid response to fires at the PFSF. One fire truck will be stationed on the PFSF site, and the other will be stationed at the Goshute Village, available for use at the PFSF in the event of a fire. Members of the PFSF fire brigade will be trained in the operation of the fire trucks and in advanced first aid.

1.4 DESCRIPTION OF THE PFSF

The PFSF is designed to store spent fuel from U.S. commercial nuclear reactors, containing up to 40,000 MTU in sealed metal canisters (approximately 4,000 storage casks). The canister-based spent fuel storage technology selected for use at the PFSF utilizes sealed metal canisters to store multiple spent fuel assemblies. Each canister is placed inside of a concrete cask. The dry cask storage system design is passive and relies on natural convection for cooling. This system is an integral part of the facility "Start Clean / Stay Clean" philosophy, in that it eliminates the need to handle individual

ATTACHMENT C

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SERIES: The Leftovers Of the Nuclear Age. Second in a series

HEADLINE: THE LEFTOVERS OF THE NUCLEAR AGE / WANTED: SAFE SPOT FOR NUCLEAR WASTE / \$3B LATER, NEV. SITE IS STILL IN QUESTION

BYLINE: By Earl Lane. WASHINGTON BUREAU

DATELINE: Yucca Mountain, Nevada

BODY:

Yucca Mountain, Nevada - This barren desert ridge about 100 miles northwest of Las Vegas is surrounded by some of the most forbidding territory in the world.

To the southwest is fabled Death Valley. To the east, the desert floor is pockmarked by manmade craters and laced with radioactive debris created during 825 underground and 100 atmospheric nuclear test explosions.

Yucca Mountain would seem a good candidate for the last resting place for some of the nation's most dangerous nuclear waste. For some, there is an appealing symmetry to burying the spent fuel from the nation's commercial nuclear program in the same remote territory that helped give birth to the Atomic Age.

But despite the expenditure of nearly \$3 billion and two decades of investigation, federal officials still cannot say for sure whether it would be safe to put the spent reactor fuel - as well as some radioactive waste from military operations - in a hole some 1,000 feet below the crest of Yucca Mountain.

There is a hum of activity at the site and an intimation of progress. Huge ventilation fans whine at the north portal to the five-mile, U-shaped tunnel that has been dug through the heart of the mountain. Work crews and researchers shuttle in and out of the facility on small rail cars, heading for cave-like alcoves where experimental equipment has been arrayed to study the underground environment in detail.

Outside, dozens of boreholes have been sunk into the mountain and its nearby landscape. A U.S. Geological Survey team lowers sensors into a deep shaft from the crest of the 4,960-foot mountain to determine its "pneumatic" behavior - or how the mountain breathes gases in and out of its fissures according to changes



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in atmospheric pressure.

Probably no other patch of land on Earth has received more scientific attention during the past decade. The "site characterization" process has involved hundreds of scientists - geologists, hydrologists, seismologists, vulcanologists. Lake Barrett, acting director of the Department of Energy's office for civilian radioactive waste, estimates the scientific analyses of **Yucca Mountain** now are approaching 1 million pages.

And yet fundamental questions, particularly about the amount of **water** infiltration and its flow rates through the mountain, remain unanswered even as federal officials promise to deliver a viability decision on the repository site by late next year. A final recommendation on the site's suitability would come three years later.

Project officials cite the recently completed tunnel as a milestone toward resolving Yucca Mountain's future. Some critics see it as but a metaphor for the money pit of unfulfilled dreams in a nuclear waste disposal program that has been marked by cost overruns, schedule delays, changing criteria, management problems, scientific controversy and political opposition.

"The nuclear establishment is harvesting the fruits of years of incompetence and mendacity," said Dean Abrahamson, a public-policy specialist at the University of Minnesota who also spent 20 years in the nuclear industry.

When commercial reactors were being built in the 1960s, he said, federal officials "treated waste as if it were a non-problem." The attitude, Abrahamson said, was "when we get enough of it, we'll dig a hole someplace and bury it."

Now, in the twilight of the 20th Century, that has proved to be much easier said than done. Daniel Dreyfus, Barrett's predecessor at the Energy Department, said the Yucca Mountain project was unfocused when he took over in late 1993. "The scientific approach to the thing was to collect a lot of data and not to design a facility," Dreyfus said. There was little sense of closure and "in trying to get a composite plan together, there were great big pieces of it nobody got around to." He cited the lack of studies on how close the fuel canisters should be spaced in the tunnels and what heat output would be acceptable.

Barrett is confident there will be enough data by 2001 to decide whether to proceed with a formal application to the Nuclear Regulatory Commission to build the repository. He declines to lay odds, although Sen. Frank Murkowski (R-Alaska), chairman of the Senate Committee on Energy and Natural Resources, says department officials tell him privately that they think there is an 80 percent chance the mountain will prove suitable as a burial site.

If it is not, analysts say, there are no alternatives on the horizon. And given the history of the Yucca Mountain project, few are willing to predict when or if it will be completed. The proposed opening of the repository already has been set back twice - first from 1998 (the deadline set by law) to 2003; and then to 2010. Energy Department officials have talked about 2015 as a more realistic target.

Such uncertainty has helped drive the nuclear industry's campaign on Capitol



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Hill for an interim storage site - essentially a parking lot for casks filled with spent fuel - on several dozen acres of desert adjacent to Yucca Mountain. More than 30,000 tons of spent fuel has accumulated at commercial power reactors nationwide, and industry officials say they are running out of space to keep it. But the Clinton administration opposes any effort to mandate such a storage facility until it is clear the mountain will be the ultimate burial site for the waste.

Determination of that suitability has been a fitful process with changing financial resources and technical criteria. In 1981, according to one account, federal officials had estimated that repository site studies could be done for \$60 million to \$80 million. By 1987, the estimate was \$2 billion each for three sites - and Congress stepped in to declare Yucca Mountain the sole candidate.

By 1992, the Energy Department was projecting it would cost \$6.3 billion to study Yucca Mountain and prepare a license application. Congress balked, cutting annual appropriations and forcing a reorganization of the project and a loss of 1,075 contractor jobs.

The result has been a leaner effort, Energy Department officials said, which is aimed at coming to closure on some key scientific issues. They include:

- Earthquakes: The Yucca Mountain site is on or near 33 active faults, including one - the Ghost Dance fault - that intersects the repository level deep underground. The Nevada Agency for Nuclear Projects - a state office that monitors the Yucca Mountain project - reviewed earthquake data for southern Nevada and found that since 1976 there have been 621 seismic events of greater than 2.5 magnitude within 50 miles of Yucca Mountain. Most notable was a 5.6-magnitude earthquake near Little Skull Mountain - eight miles southeast of Yucca - on June 29, 1992. That quake caused nearly \$1 million worth of damage to a Department of Energy field office at Yucca Mountain.

Energy Department officials say - and scientists generally agree - that earthquakes pose less hazard to underground structures than they do to surface facilities because of the way shock waves travel through soils versus solid rock. In any event, the agency says, the repository site has been stable for the past million years (evidence suggests the last major disturbance of the Ghost Dance fault occurred 11 million to 12 million years ago). A 1995 National Research Council report found the regional geology is expected to remain relatively stable for about 1 million years.

- Volcanoes: Yucca Mountain was formed millions of years ago by volcanic eruptions that produced layers of ash that eventually condensed into a very hard, dense form of rock called tuff. The explosive-type volcano that formed Yucca is extinct, but there remain seven small, dormant volcanoes in the area that are under study. Two of the cones are 12 to 27 miles away and may have been active within the past 100,000 years. A panel of scientists estimated last year that the possibility of an eruption through the repository in the next 10,000 years is about 1 in 10,000.

- Geology and water flow: Probably the biggest question mark at Yucca Mountain remains the amount and flow of water in and near the repository site. Although it is an arid region - with an average of about 6.6 inches of rainfall a year - some water infiltrates the mountain, and a climate change could bring



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more.

Deep within the mountain, researchers have found unexpected traces of radioactive chlorine-36 produced during the atmospheric bomb tests. They conclude that the material, carried along by water infiltration, traveled nearly 1,000 feet into the mountain fairly rapidly during the half-century since the beginning of the bomb testing. This raises the question of whether there are "fast pathways" for carrying moisture through cracks and fissures in the mountain to the repository level. Over time, such moisture would cause the fuel containers to corrode. As their contents are released, the seeping water could transport radioactive material into the rock and eventually to the underlying ground water table.

Researchers also have found pockets of trapped water in the mountain. Although the pockets are below the proposed repository level, scientists say it is important to understand how they formed and whether any similar pockets could be breached during excavation of repository tunnels.

"We have found very little liquid water in the mountain," says geologist John Peck.

In theory, the containers of spent fuel will produce enough heat to drive off any nearby moisture. Still, as the fuel containers - and the surrounding rock - cool over time, any water vapor present could condense out as liquid water that could corrode the containers.

Project scientists plan several tests to see just how the rock behaves when it is heated. One small-scale heating test is now under way in an alcove off the main **Yucca Mountain** tunnel. A larger test is scheduled to begin in several years, too late to provide any data for the "viability assessment" due next year.

The Nuclear Waste Technical Review Board, a peer-review group that reports to Congress and the Energy Department, and the Lawrence Livermore National Laboratory in California have raised questions about whether the agency is doing large heating tests for long enough times. The Livermore researchers have argued that it would take a minimum of six years of heating to provide an adequate look at the rock behavior. The large-scale test now is planned for four years.

Project officials have been studying further steps - in addition to the packaging of the spent-fuel assemblies in double-walled metal canisters - to keep water away from the waste for a longer time. These can include additional fillers in the casks, drip shields above the canisters to deflect water, drains in the storage tunnels, backfilling the repository to slow or divert water flow and even use of additives on the tunnel floors to react with any waste that does escape the casks.

Even as some key members of Congress have pushed for a prompt decision at **Yucca Mountain**, the congressional General Accounting Office reported earlier this year that budget-cutting and the resulting constriction of scientific activity on the project could mean more delays.

GAO had pointed out in May, 1993, that the underlying reason for the slow progress and escalating costs at **Yucca Mountain** had been the Energy Department's



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top-heavy management and support structure on the project. Less than half of the money was being spent on scientific and technical investigations at the mountain.

Energy Department officials say that has changed, with a sharper focus now on ways to contain and isolate the waste within a repository.

To complicate matters, the agency is trying to determine whether Yucca Mountain is a safe location for a waste repository as the regulatory standards by which the site will be judged are changing.

The Nuclear Regulatory Commission's licensing standards must be consistent with radiation health standards of the Environmental Protection Agency. But EPA is just beginning the process of issuing its health standards for Yucca Mountain site. And those standards are expected to reflect a different - and more controversial - approach than the agency took originally in setting standards for nuclear waste repositories.

Previously, the standard emphasized limiting cumulative releases of radioactive materials - and their concentrations in air, water and soil - over a 10,000-year time frame. The new approach, recommended by an advisory panel convened by the National Academy of Sciences, is expected to emphasize the level of risk for a "critical group" of people living near the repository rather than the absolute amount of radiation released.

That could mean acceptance of releases that do not directly threaten the health of nearby residents generally. But one member of the panel - Thomas Pigford of the University of California at Berkeley - argued strongly that the critical group should be narrowly defined as the so-called subsistence farmers who draw water from wells near the waste dump, grow most of their own food and live at the time of maximum radiation releases. While such farmers may be few and far between, protecting them would be a conservative approach that avoids what Pigford said would be "an unjustified and unprecedented leniency in public health protection from radioactive waste."

Larry Weinstock, acting director of the EPA's Office of Radiation and Indoor Air, said the agency is likely to issue its Yucca Mountain standards in the fall. "You don't have to go all the way to the subsistence farmer to come up with something that is reasonable," Weinstock said. He said the agency is going to define an area around Yucca Mountain and the population of concern. He said EPA also probably will "set some maximum level of dose or contamination of groundwater that could exist outside of a certain region."

Nevada officials say pending legislation in Congress - which the White House said it will veto - would pre-empt the EPA by setting an average annual exposure limit of 100 millirems for the repository. State officials consider that limit - equal to one-third of the natural radiation we receive annually from background sources such as cosmic rays - to be too high.

As a practical matter, project scientists say it is highly unlikely any person will be exposed to whatever maximum the EPA comes up with. A 1995 computer analysis concluded that during the first 10,000 years after burial, the peak radiation releases to exposed individuals would be only 0.8 millirems per year - far below the annual background exposure of 300 millirems. Even under the worst-case assumptions, the radiation doses to the maximally exposed individuals



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would be about 40 millirems per year.

But Pigford says it is the potential radiation exposures over the longer haul - say after 100,000 years - that could be more serious. It is then, after a slow buildup of contamination in the ground water over hundreds of millenia, that some people who use the water could receive radiation doses much higher than those predicted for the first 10,000 years, Pigford says.

In the end, Energy Department officials say, it is unreasonable to expect that all the technical answers will be available before Uncle Sam decides whether to go ahead with the repository. Some of the information - on the performance of the waste canisters over time, for example - can only be gathered and analyzed once the repository is built and loaded. The design of the repository (which also continues to evolve) will allow the Energy Department to retrieve the waste canisters for a period of time - probably about 70 years - during which performance of the repository can be carefully monitored.

"We're not trying to prove Yucca Mountain is the best site," says Theodore Garrish, a vice president of the Nuclear Energy Institute, the industry's policy organization. "We are trying to prove it is a good site . . . engineering and good science can make this site work." He predicted that if Yucca Mountain ultimately is deemed unsuitable, "it'll be years and years before the country comes to a solution" for the nuclear waste dilemma.

Arjun Makhijani, a physicist at the nonprofit Institute for Energy and Environmental Research, said his organization would like to see an independent agency manage any spent-fuel repository. "The Department of Energy does not have a good record of managing its own wastes" at nuclear weapons facilities, Makhijani said.

Some analysts have argued that the spent fuel should be left in temporary storage at reactor sites not only until questions at Yucca Mountain are resolved but also until social acceptance of the project is higher.

Federal officials see that as a recipe for further inaction.

Barrett said: "Those who call for no solution as the best solution and just let's think about it for a decade or two are repeating the mistakes of the early 1950s," when tough decisions on how to manage spent fuel were left for another day. Plan for Nuclear Waste The U.S. government is investigating a site at Yucca Mountain, Nev., to be the repository for the nation's nuclear waste. Site studies currently are going on there and the repository could be operational in about 15-20 years. Here is a look at how nuclear waste might be stored at the planned facility: Preparing the Waste How the waste is prepared at the waste handling building for storage in the repository. 1. The cask used for transporting the waste to Nevada is removed from its carrier. 2. The cask is then opened and the nuclear wastes is moved to a staging rack. The waste is then loaded into a storage container. 3. The lids are welded onto the disposal containers. The containers' outer lids will take as much as 33 hours to weld on. 4. The sealed container is placed on a rail car and pushed up to a transporter. A remote-controlled mechanism in the transporter pulls the container and the rail car inside. The Process 1. Canisters of nuclear waste, sealed in special casks, are shipped to the site by truck or train and are initially stopped at security station. 2. Casks are cleared to the carrier staging shed, where they



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are inspected for external contamination. 3. Casks then are sent to the waste handling building, where the waste is removed from the casks and placed in special containers that will be stored in the mountain. 4. Storage containers are placed into transporters. A locomotive attaches itself to the transporter and pulls it from the building, through the north portal, down the north ramp and to its destination at one of the emplacement blocks. 5. Containers are pushed into one of the tunnels in an emplacement block, where it will be periodically checked by sensors and robots. Tunnel Travel How the storage containers are deposited in the emplacement drifts. 1. The transporters carrying the nuclear waste are pulled through the portals and ramps by locomotives. 2. Once the transporter reaches an emplacement drift, it pushes the storage container out onto a loading dock. 3. A transfer locomotive then backs up an emplacement locomotive to the loading dock. 4. Emplacement locomotive pushes storage container to its position in the emplacement block. Types of Waste The Nevada site is being designed to handle three types of nuclear waste: Fuel assemblies from boiling-water reactor power plants Fuel assemblies from pressurized water reactor power plants Pour canisters filled with a mixture of glass and waste from defense-related programs.

SOURCE: Department of Energy; Nuclear Regulatory Commission

GRAPHIC: Newsday Illustrated Color Chart by Steve Madden-Plan fo Nuclear Waste: Here is a look at how nuclear waste might be stored at the planned facility Source: Department of Energy; Nuclear Regulatory Commission. (SEE END OF TEXT; ILLUSTRATIONS NOT IN TEXT DATABASE). Color Photos by Ken Korotkin- 1) Above, possible site for a temporary waste repository near the 2) permanent facility proposed at Yucca Mountain, Nev., below.

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ATTACHMENT D

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SERIES: THE LEFTOVERS OF THE NUCLEAR AGE. First in a series

HEADLINE: THE LEFTOVERS OF THE NUCLEAR AGE / THE ERA AFTER / AT NUCLEAR PLANTS
NATIONWIDE, TONS OF WASTE PILE UP AMID A POLITICAL, SCIENTIFIC DEBATE

BYLINE: By Earl Lane. WASHINGTON BUREAU

DATELINE: Limerick, Pa.

BODY:

Limerick, Pa. - Nestled in racks at the bottom of a 39-foot-deep pool of water, the used fuel from the Limerick nuclear reactor betrays only the slightest hint that it will remain deadly for 10,000 years or more.

The radioactive fuel gives off a faint blue glow as high-energy particles it emits speed through the water.

The effect is eerily alluring - amplified by water so clean that it tricks the eye. Although 22 feet below the surface, the cross-like tops of the fuel bundles seem within reach.

Such bundles - nasty leftovers of the nuclear era - have been accumulating in storage pools at 109 commercial power reactors across the country and at 10 closed reactors. More than 34,000 tons await disposal, an amount that grows by about 2,000 tons a year.

The fuel is called "spent," but that is a misnomer. It will retain its ominous residual activity for millennia. The final disposal of spent reactor fuel - an afterthought during the "Atoms for Peace" optimism at the birth of nuclear power - has become one of the great technical and political challenges of the modern era. It is the ultimate not-in-my-backyard dilemma.

The Environmental Protection Agency is charged with developing radiation protection standards for the ages - from identifying the population that might be at-risk from any radiation leaking from a waste repository to setting dose limits. Planners also must consider what could happen if someone were to inadvertently intrude into the dump centuries from now.

It is as if the ancient Egyptians had to do a risk assessment before burying King Tut, trying to determine the chances that his pyramid would ever be disturbed.



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Such forecasting aside, the nation's spent-fuel disposal program has been stymied, critics say, by false starts, escalating costs, management ineptitude, missed deadlines and nagging doubts about how quickly to put the deadly waste out of sight and out of mind.

The effort has been complicated recently by an all-out industry campaign to persuade Congress to approve a temporary holding facility for the waste adjacent to Nevada's Yucca Mountain, a step critics say is ill-timed and could jeopardize the effort to determine whether that barren ridge 100 miles northwest of Las Vegas is suitable as a permanent burial site for the commercial spent fuel as well as some wastes from military nuclear programs.

The temporary storage site would compete with the Yucca Mountain project for tight funds, they say, and - if built - would ease the pressure to build the permanent repository, now projected to open in 2010 at the earliest and cost at least \$33 billion (in 1994 dollars) through 2071. Under provisions of a House bill, the temporary storage facility would have an initial license period of 20 years, a second phase of up to 100 years - and renewable beyond that.

"I don't think they industry officials care about" a permanent repository, says Robert Loux of the state of Nevada's Nuclear Waste Projects Office. "They believe their only opportunity to get waste away from reactor sites is through interim storage."

Loux questions whether the temporary facility - essentially a parking lot for huge casks filled with reactor fuel assemblies - could be built, licensed and operating as quickly as the congressional legislation envisions. By a 65-34 vote in April, the Senate approved a plan to open the temporary storage site by 2003. On Thursday, a House subcommittee passed a similar bill with a 2002 opening for the storage site. The full House is expected to follow suit. But the White House promises a veto. The Clinton administration opposes any attempt to establish an interim storage site in Nevada until the viability of Yucca Mountain as a permanent burial site is established.

Backers of the interim facility say it will provide a measure of relief for utilities that have started to build expensive on-site storage facilities at nuclear reactors because the government has been unable to deliver on its legal obligation - affirmed last year by a U.S. appeals court - to start taking the waste off their hands by next January.

Utilities, state regulators and federal officials are due in court next month to discuss compensation or other legal remedies for the Energy Department's inability to take the waste. The department already has broached the possibility of reimbursing utilities - at taxpayer expense - for some of the cost of building new on-site storage facilities for used reactor fuel.

The battle over an interim storage facility in Nevada is but the latest chapter in the tangled and vexing history of nuclear waste policy in the United States.

Many experts remain confident that the nuclear waste dilemma - with its attendant questions about the safety of moving the spent fuel - can be solved. "Most people in the field don't see any problems," said Peter Soo, a nuclear



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engineer at Brookhaven National Laboratory. "The solutions are at hand. We know how to do it."

But as Brookhaven's own public relations fiasco with a small tritium leak from its main research reactor has shown, the public anxiety about all things radioactive can make calm discussion about technical solutions for nuclear waste problems difficult.

Brookhaven also became an early lightning rod for opposition to spent-fuel transport in the mid-1970s when New York City objected to truck shipments of the lab's spent fuel on city streets. Although a court ruled in its favor, Brookhaven decided to ship the fuel off Long Island by barge instead.

The history of nuclear waste policy is littered with aggrieved parties, heated rhetoric and often shaky data on both sides. The industry lately has been pressing a sense of urgency, labeled dubious by critics, about reactors running out of storage space and facing shutdown (a contention that surfaced in Senate debates in the early 1980s as well). Anti-nuclear activists have warned that transport of spent fuel will create "mobile Chernobyls," potential catastrophes on wheels in ill-prepared communities, although there has never been a serious accident involving spent-fuel transport here or abroad. For years, the Energy Department promised that it would meet the congressionally mandated Jan. 31, 1998, deadline for accepting spent fuel from commercial reactors - even as it made little substantive progress toward that goal while spending nearly \$3 billion at Yucca Mountain alone.

The debate has been marked by what seems at times an unbridgeable gap between engineers who feel comfortable with the risks and benefits of nuclear power and a public that fears the specter of any radiation release, mistrusts the assurances of engineers and scientists and has felt misled in the past by inept management of government nuclear weapons plants and some commercial power reactors.

"On the whole, the industry has done a poor job of educating the public and establishing confidence with the public in their ability to deal with nuclear materials and nuclear waste," said Vincent Franceschi, president of Vectra Technologies, a vendor of storage casks for spent nuclear fuel. "The technologists have rebutted back with factual, technical arguments that don't carry much weight in an emotional discussion. It's a pretty steep uphill battle."

Rather than an impending crisis in fuel storage space, some social scientists say, the real crisis is the continuing lack of public confidence in nuclear technology.

"The civilian nuclear power program has grown out of the weapons program and the bomb," said Paul Slovic, president of Decision Research Inc. of Eugene, Ore. "The image of the bomb is in the back of virtually everyone's mind . . . If you ask people what a typical accident might entail at a nuclear plant, you get images that look like the aftermath of a nuclear bomb." Slovic's firm has done opinion research on nuclear issues for Nevada.

Given the adamant opposition of that state - and the likelihood of wider public concern once transportation of spent fuel begins nationally - Slovic and others say it makes more sense to leave the stuff where it is until attitudes



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change.

Marvin Resnikoff of Radioactive Waste Management Associates, a Manhattan-based consultant who has done contract work for Nevada, argues that storage at reactors is safer for now than mounting a large-scale movement of spent fuel to a single location.

"The longer the fuel sits and cools down, the safer it is to transport it," Resnikoff said. For now, he said, the spent fuel should be stored at reactors. "You make it, you take it," Resnikoff said.

There is little sympathy for that view in the U.S. nuclear industry, which sees few hopes of ever building another reactor - the last order in this country came in 1978 - unless the waste disposal dilemma is resolved.

Industry officials contend the Energy Department is dragging its feet. "We haven't got back anything but excuses," said Michael Morris, president of Consumers Energy Co., a nuclear utility in Jackson, Mich.

By getting spent fuel - at more than 70 reactor sites in 34 states - to Nevada as soon as possible, analysts say, the industry avoids having to store it indefinitely at reactors at a time when proposed utility restructuring already threatens to leave operators of unprofitable nuclear power plants with as much as \$70 billion in unrecoverable costs.

Nuclear industry officials counter that it is the taxpayers who might have to pay billions if Uncle Sam is required to reimburse for on-site storage costs and other economic impacts on utilities after failing to take title to the commercial spent fuel.

Moreover, they argue that reactors were never meant to become de facto fuel storage sites. Many are situated on waterways or in other environmentally sensitive locations. With increasing local opposition to on-site fuel storage, the industry says it could be caught in an untenable position: unable to ship the fuel to a central storage or disposal site and unable to keep piling it up at the reactors.

But is the situation as desperate as portrayed in some of the congressional debates?

Proponents of the interim storage facility - citing industry figures - have warned that 27 reactors will run out of space to house their spent fuel by next year, with dozens of others to follow during the next decade.

But those 27 reactors already has alternative arrangements for on-site storage of the fuel, according to reports the utilities filed with the federal government. Even industry officials acknowledge that no reactor is seriously threatened with shutdown in the near-term.

"You don't need to shut down reactors," said Morris of Consumers Energy Co. "This isn't a threat."

Morris said the industry has a legitimate gripe, however, about the lack of results 15 years after Congress ordered utilities to start collecting fees from



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ratepayers - now running about \$630 million a year - for a federally run disposal program that seems no closer than it did a decade ago.

"There needs to be some certainty in the planning process," said Theodore Garrish, vice president for nuclear waste at the industry's Nuclear Energy Institute.

That was what Congress had tried to do when it passed the 1982 Nuclear Waste Policy Act. It ordered the Department of Energy to start a rigorous, nationwide search for spent-fuel repository sites and to begin accepting spent fuel from utilities on Jan. 31, 1998, a target which some scientists say was unrealistic from the outset.

The act ordered the Energy Department to develop two high-level waste repositories, one in the West and one in the East, where most of the commercial reactors are situated. But the agency proposed some sites - such as the government's polluted Hanford reservation in Washington state - that even its own scientists warned were likely unacceptable. Plagued by unrealistic deadlines and local opposition to proposed sites, the selection process was in disarray by 1986.

Frustrated, Congress called off the search in 1987 and passed legislation designating Yucca Mountain - in politically weak Nevada - as the sole repository candidate.

A decade later, the suitability of Yucca Mountain as a permanent waste repository remains to be determined, with gaps in information about such basic questions as the water infiltration rates. A five-mile tunnel through the mountain was completed recently and will allow more extensive studies.

Recent discoveries suggest that rainwater may percolate into the mountain at least four times faster than previously estimated. Scientists also have found evidence suggesting that some water has been able to reach the repository horizon - about 1,000 feet underground - in 50 years or less.

Given time, moisture can attack even the sturdiest waste containers.

A viability assessment of the Yucca Mountain repository - essentially a decision on whether there are any showstoppers so far - is due late next year, with a final decision on its suitability due by 2001.

For backers of Yucca Mountain, the biggest nightmare is that it would prove unsuitable after billions spent and no other site jumps to the fore. "We don't have a contingency plan if we decide we are not going to make a commitment to a geologic repository," said Daniel Dreyfus, who formerly headed the Energy Department's Office of Civilian Radioactive Waste Management. Accordingly, he said, a barely hidden agenda on Capitol Hill is to approve the temporary storage facility, get the spent fuel to Nevada at all costs "and the hell with it."

Even if shipments of spent fuel to Nevada were to begin in a few years - whether to an interim storage site or a permanent repository - they would not necessarily bring quick relief to some locations where critics of on-site storage of reactor fuel have been vocal.



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The existing contracts between the Energy Department and the nuclear utilities call for the oldest fuel to be shipped first. Reactors that have been shut down recently for political or economic reasons - such as the Trojan reactor near Portland, Ore. - do not have the oldest fuel and could be stuck with on-site storage for up to 20 years in any event.

In fact, much of the spent fuel slated for initial transport lies not in storage pools at active reactor sites but at an existing storage facility at a commercial fuel-reprocessing facility in Morris, Ill., that never operated. Also slated for early removal is fuel still on-site at the defunct reprocessing facility at West Valley, near Buffalo.

The Nuclear Waste Technical Review Board, an independent panel of experts reporting to Congress and the Department of Energy, said last year that "developing a centralized storage facility at Yucca Mountain now would only reduce, but not eliminate, the need to continue adding spent fuel storage capacity at reactor sites." The board also concluded that there is "no compelling technical or safety reasons for moving spent fuel to a centralized storage facility for the next few years." It said "the methods now used to store spent fuel at reactor sites are safe and are likely to remain safe for decades to come."

The industry developed ways to squeeze more spent fuel into the existing storage ponds and built large storage casks that can be lowered into the cooling pools and filled remotely with used fuel assemblies. The casks are then raised, drained of water, sealed and placed on reinforced, fenced concrete storage pads near the reactor for indefinite storage.

The federal Nuclear Regulatory Commission, which licenses the storage casks, has concluded that they can be safely used for as long as a century. There now are 10 on-site storage facilities in the United States, and another dozen being planned. The first such at-reactor facility, at the Surry Power Station in southeast Virginia, now has 31 filled casks and slots for as many as 84 - enough to store all of the spent fuel from the two Surry reactors when their operating licenses expire in 2012 and 2013.

While industry officials agree such dry cask storage facilities are safe, they argue it would be more efficient - and cheaper - to manage and secure the spent fuel at one central location rather than dozens of reactor sites, especially with some communities now starting to object to construction of new on-site storage facilities.

The Nuclear Energy Institute, the industry lobbying group, estimates that as many as 55 nuclear sites may require at-reactor storage facilities by 2010 - when the permanent repository is supposed to start accepting spent fuel. The cost of building and operating those facilities through 2010 is projected to be at least \$4.3 billion, according to Theodore J. Garrish, the institute's vice president for nuclear waste management.

Auke Piersma, an analyst for Public Citizen - a nonprofit group that has been critical of the nuclear industry - challenges those estimates. Using Department of Energy data and different criteria for the amount of reserve space required in the spent fuel pools, Piersma projects that 32 sites will need added storage by 2010. He puts the cost at \$665 million.



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The Congressional Budget Office has estimated the central storage facility being discussed in Congress would cost \$2.3 billion over five years, with \$1.4 billion of that devoted to transporting the spent fuel to Nevada from sites around the country.

Transportation is another sore point for opponents of the centralized facility. Some state and local officials worry about the potential for more frequent accidents if the number of spent-fuel shipments increases dramatically. There have been estimates that it would take as many as 17,000 rail and highway shipments over several decades to move the spent fuel to Nevada.

Specialists say there has never been a serious accident during the more than 2,400 shipments of spent nuclear fuel in the United States over the years. While commercial spent fuel has been piling up at reactors, used fuel from smaller research reactors is shipped regularly to a Department of Energy storage site near Aiken, S.C.

"Spent reactor fuel has moved around this country for years," said Susan Shankman, a specialist on nuclear fuel transportation and safety at the Nuclear Regulatory Commission. "Research reactor fuel moves almost weekly, and safely."

Critics also contend that certification of the shipping casks is done largely through computer simulation of accident scenarios and subscale tests of cask models. Whether those tests adequately predict the behavior of the casks under real world conditions such as a catastrophic highway tunnel fire remains a point of contention.

Daniel Dreyfus, who formerly headed the Energy Department's commercial radioactive waste program, sees the current argument over an interim storage site as a "sideshow" to the more pressing question of whether Yucca Mountain will be deemed suitable as a burial site for the waste. "We've bet the farm on one site geologically," Dreyfus said. "We're unlikely to ever look at another site if it doesn't work," he said.

Dreyfus, who also worked on Capitol Hill for many years, said "the politicians got suckered" in the early 1980s when they approved a nuclear waste disposal program that has proved to be far more costly, complex and difficult to sell than they had imagined. There was talk at the time of building a repository for a total of \$800 million, Dreyfus said.

D. Warner North, a senior vice president of Decision Focus Inc., a consulting firm in Mountain View, Calif., argues that social sciences are now proving as necessary as Earth sciences and engineering in setting policy on nuclear waste. "We should ask the social scientists for their help in communicating with the public about nuclear waste," North wrote recently in *Physics Today*.

Proponents of a centralized storage facility say their message is simple enough. "It's in the best interest of the communities locally that the spent fuel not be kept there indefinitely," said Eileen Supko of Energy Resources International, a consulting firm that has done work for the nuclear industry. "It makes no sense to store the fuel for 50 or 100 years. It's a waste of resources. We could be spending that money on renewables, clean coal technology, the next generation of nuclear plants, whatever."



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Dreyfus, now associate director for operations at the National Museum of Natural History, agrees that the spent fuel should not be left at reactor sites indefinitely.

"The basic truth is that someday it's got to move," Dreyfus said. But he adds, "I can't find any reason to leap forward and do it instantly." How Waste Occurs 1. Nuclear reactors are powered by enriched uranium-235 fuel. This fuel is in the form of bullet-sized pellets loaded into long rods. The fuel turns the coolant into steam, which turns the turbines that make electricity. 2. About 200 rods are packed into fuel assemblies. After about six years, the spent fuel assemblies are removed and placed in storage pools to cool. Here they remain unless they are removed to dry storage.

GRAPHIC: Newsday illustrated chart by Steve Madden - How Waste Is Created. Source: Department of Energy. Nuclear Regulatory Commission. (SEE END OF TEXT; ILLUSTRATIONS NOT IN TEXT DATABASE). 1) Color cover photo by Dan Z. Johnson - Engineer Matthew Eyre at spent-fuel cooling pool at Limerick, Pa., power plant. 2) Color photo by Ken Korotkin- View inside the Yucca Mountain project tunnel, where nuclear waste would be stored if the U.S. government approves the Nevada site as a permanent repository for radioactive materials. 3) Color photo by Dan Z. Johnson- A pool of water cools used radioactive fuel from a nuclear reactor in Limerick, Pa. 4) Photo by Dan Z. Johnson A sign in the spent-fuel pool area warns workers at the Limerick, Pa., nuclear reactor.

LANGUAGE: English

LOAD-DATE: August 3, 1997



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ATTACHMENT E

17TH STORY of Level 1 printed in FULL format.

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Las Vegas Review-Journal (Las Vegas, NV)

September 11, 1997 Thursday, FINAL EDITION

SECTION: A; Pg. 1A

LENGTH: 1188 words

HEADLINE: Plutonium found in water

BYLINE: Keith Rogers

BODY:

Nevada's U.S. senators say tainted ground **water** at the test site supports their fears about **Yucca Mountain**.

By Keith Rogers
Review-Journal

Plutonium from a below-ground nuclear test conducted more than 28 years ago has traveled nearly a mile through ground **water** layers at the Nevada Test Site, two government scientists said Wednesday.

The discovery raised concerns with U.S. Sens. Harry Reid and Richard Bryan, both D-Nev., about future contamination risks if nuclear waste is stored at Yucca Mountain.

The scientists said plutonium, a potentially deadly cancer-causing agent from the core of a nuclear bomb, was detected in a monitoring well eight-tenths of a mile south of the Benham test that was conducted Dec. 19, 1969, in the northwest part of the test site.

The levels were within safe drinking water standards and the contamination had not migrated off the test site, 65 miles northwest of Las Vegas, they said.

The levels were less than half the 4-millirem-per-year dose allowed for drinking water, the scientists said.

Plutonium
'This is the first time we've seen plutonium transported in ground water,' said Annie Kersting, a chemist from Lawrence Livermore National Laboratory in California.

Kersting and her colleague, Joe Thompson, a chemist from the Los Alamos, N.M., national laboratory, revealed their findings in a paper presented during a session of the American Chemical Society's national meeting in Las Vegas.

After their presentation, they said the fact that plutonium was carried through ground **water** attached to very small mineral particles _ clay and zeolites _ does not necessarily mean plans for **Yucca Mountain** should be halted. **Yucca Mountain**, which borders the test site, is 100 miles northwest of Las Vegas.



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'I don't know if it has any particular significance. The material was deposited as a result of nuclear tests without engineered barriers,' like those proposed for the Yucca Mountain repository, Thompson said.

But after the presentation, Reid and Bryan, in a joint statement, said the discovery is more evidence that confirms the nation's high-level nuclear waste should not be entombed in **Yucca Mountain**.

'This report adds significant credibility to our previously-stated concerns that proceeding with the storage of nuclear waste at the (planned) **Yucca Mountain** repository poses a grave risk of environmental contamination,' Reid said.

'Contaminated ground **water** at the Nevada Test Site is not something that should be taken lightly,' he said. 'If what we have seen before bears out, there is a lot of work which needs to be done on radiation and ground **water** before anybody starts storing any high-level nuclear waste here.'

Bryan said the report is 'another red flag that has been raised up the **Yucca Mountain** flagpole.'

'This new report on the speed with which plutonium has migrated through the **water** table should send shock waves through the scientific community,' Bryan said. He noted that even though the report focused on the test site, 'far greater quantities of radioactive materials would be stored at **Yucca Mountain**.'

The repository is being designed to contain 77,000 tons of high-level radioactive waste, primarily metal-encased pellets of spent fuel from commercial nuclear power reactors. Ten percent of the waste would come from military sources and would be solidified before it is stored as glass logs. Plutonium is one of the radioactive waste components. It has a half-life of some 24,000 years _ the time it takes for half of its atoms to decay to safe levels.

Rick Nielsen, executive director of Citizen Alert, a statewide environmental group, said the report signals an alarm about the future quality of ground water in the Southern Nevada region.

'With our limited water supply, we don't need any more contamination in the future,' he said. 'It shows how easily our ground water can become contaminated.'

Nielsen said scientists need to determine how long it will take for the contamination to migrate off the test site, a question Kersting and Thompson said they are trying to answer.

Said Kersting, 'How far does plutonium migrate? We don't know.'

'It's clear from this work that our understanding of the subsurface geology is inadequate,' she said.

The study was part of an ongoing monitoring program at the test site that began in 1973.



Scientists have theorized that the higher temperatures and pressures produced by a nuclear chain reaction below ground melts rock around the blast cavity, but also adds new fractures in the bedrock. The Benham test was conducted at 4,500 feet below the surface and some 2,000 feet below the water table. The test had an energetic yield equivalent to detonating 1.15 million tons of TNT.

Kersting and Thompson analyzed samples from two monitoring wells. The wells were sampled three times over a 16-month period ending in April.

By comparing the ratio of different plutonium isotopes attached to fine particles of minerals in the samples they were able to tell that the plutonium contamination came from the 1968 Benham test and not from the 1975 Tybo test, a smaller test that was detonated in the same area closer to the surface at a depth of 2,500 feet.

'Is it coming from the melt glass (in the test cavity)? I don't think so. I think it's a step in between that alters the chemistry. You could have had fractures (from the test) that inhibited ground water,' Kersting said.

'Indeed, minerals in the subsurface have the ability to transport plutonium,' she said. 'I think the **Yucca Mountain** Project should look at these results.'

Nielsen said the discovery raises the question about what scientific proof is needed to deem **Yucca Mountain** unsuitable for storing high-level radioactive waste.

'What is a disqualifying factor? We keep finding more and more evidence that Yucca Mountain should not be licensed as a repository. If this is not enough, what is enough to disqualify it?' he asked.

While this was the first time that scientists confirmed that plutonium had migrated from a test cavity, it was not the first time radioactive materials have escaped from a test cavity into ground water at the test site.

In 1990, Department of Energy scientists acknowledged they had found fission products in water from the 1977 Sandreef nuclear test at Yucca Flat in a hole that was dug eight years later for the Aleman test. They believed the materials _ bits of radioactive cesium, antimony, and high levels of tritium, a radioactive form of hydrogen _ had been injected through cracks in rock layers that widened at the time of the blast.

The materials had traveled one-fifth of a mile from the Aleman cavity, which means at that rate it would take 1,120 years for the materials to migrate beyond the southern boundary of the test site.

For about a year after contaminants were discovered in the Aleman hole, scientists were puzzled by small amounts of plutonium that had been detected. They later concluded their samples were tainted with plutonium that had been scattered across the test site from above-ground tests and consequently had been washed into the hole by surface runoff.

LANGUAGE: ENGLISH

LOAD-DATE: September 12, 1997



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ATTACHMENT F

NEAR-FIELD MIGRATION OF RADIONUCLIDES IN THE SUBSURFACE AT THE NEVADA TEST SITE: EVIDENCE FOR COLLOID TRANSPORT OF RADIONUCLIDES THROUGH FRACTURED VOLCANIC ROCK. Annie B. Kersting, Lawrence Livermore National Laboratory, Livermore CA 94550 and Joseph L. Thompson, Los Alamos National Laboratory, Los Alamos NM 87545.

Our ability to characterize and mitigate contamination of radionuclides in the subsurface is limited by our understanding of the mechanisms and major pathways for transport. There is strong evidence that particles and colloids ($< 1 \mu\text{m}$) are ubiquitous in groundwater and that they have the potential to enhance the transport of contaminants that strongly sorb to the solid phase. In order to investigate the migration of radionuclides via colloids we carried out a series of filtration experiments using groundwater pumped from wells downgradient from an underground nuclear test event. We analyzed unfiltered groundwater, colloidal material caught on a series of filter sizes, and the ultrafiltrate for gamma-emitting radionuclides and tritium. Tritium, ^{60}Co , ^{137}Cs , $^{152,154,155}\text{Eu}$ and Pu isotopes were detected in the unfiltered groundwater samples. Most of the activity was caught on the filters; the ultrafiltrate had only a few percent of the radionuclides other than tritium. The colloidal material consists of zeolites (mordenite), clays (illite), and cristobalite (SiO_2). These minerals are consistent with the lithology of the host aquifer (volcanic tuff). We conclude that radionuclides can and do bind to colloids that then may be transported significant distances in the saturated zone.

*This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under contract No. W-7405-Eng-48.

ATTACHMENT G

7TH REFERENCE of Level 1 printed in FULL format.

FULL TEXT OF BILLS

105TH CONGRESS; 1ST SESSION
IN THE SENATE OF THE UNITED STATES
PUBLIC PRINT - Includes amendments incorporated

S. 104

1997 S. 104; 105 S. 104

<=A1> Retrieve Bill Tracking Report

SYNOPSIS:

AN ACT To amend the Nuclear Waste Policy Act of 1982.

DATE OF INTRODUCTION: JANUARY 21, 1997

DATE OF VERSION: MAY 7, 1997 -- VERSION: 4

SPONSOR(S):

Sponsor not included in this printed version.

TEXT:

* Be it enacted by the Senate and House of Representatives of the United*
*States of America in Congress assembled, *That the Nuclear Waste Policy
Act of 1982 is amended to read as follows:

"SECTION 1. SHORT TITLE AND TABLE OF CONTENTS.

"(a) SHORT TITLE.-THIS ACT MAY BE CITED AS THE 'NUCLEAR WASTE POLICY
ACT OF 1997'.

"(B) TABLE OF CONTENTS.-

"Sec. 1. Short title and table of contents.

"Sec. 2. Definitions.

"TITLE I-OBLIGATIONS

"Sec. 101. Obligations of the Secretary of Energy.

"TITLE II-INTEGRATED MANAGEMENT SYSTEM

"Sec. 201. Intermodal transfer.

"Sec. 202. Transportation planning.

"Sec. 203. Transportation requirements.

"Sec. 204. Viability assessment and Presidential determination

"Sec. 205. Interim storage facility.

"Sec. 206. Permanent repository.

"Sec. 207. Compliance with the National Environmental Policy Act.

"Sec. 208. Land withdrawal.

"TITLE III-LOCAL RELATIONS

"Sec. 301. Financial assistance.

"Sec. 302. On-Site Representative.

"Sec. 303. Acceptance of benefits.

"Sec. 304. Restrictions on use of funds.

"Sec. 305. Land conveyances.

"TITLE IV-FUNDING AND ORGANIZATION

- "Sec. 401. Program funding.
 "Sec. 402. Office of Civilian Radioactive Waste Management.
 "Sec. 403. Federal contribution.
- "TITLE V-GENERAL AND MISCELLANEOUS PROVISIONS
- "Sec. 501. Compliance with other laws.
 "Sec. 502. Judicial review of agency actions.
 "Sec. 503. Licensing of facility expansions and transshipments.
 "Sec. 504. Siting a second repository.
 "Sec. 505. Financial arrangements for low-level radioactive waste site closure.
 "Sec. 506. **Nuclear** Regulatory Commission training authority.
 "Sec. 507. Emplacement schedule.
 "Sec. 508. Transfer of title.
 "Sec. 509. Decommissioning Pilot Program.
 "Sec. 510. Water rights.

"TITLE VI-NUCLEAR WASTE TECHNICAL REVIEW BOARD

- "Sec. 601. Definitions.
 "Sec. 602. **Nuclear** Waste Technical Review Board.
 "Sec. 603. Functions.
 "Sec. 604. Investigatory powers.
 "Sec. 605. Compensation of members.
 "Sec. 606. Staff.
 "Sec. 607. Support services.
 "Sec. 608. Report.
 "Sec. 609. Authorization of appropriations.
 "Sec. 610. Termination of the board.

"TITLE VII-MANAGEMENT REFORM

- "Sec. 701. Management reform initiatives.
 "Sec. 702. Reporting.

"TITLE VIII-MISCELLANEOUS

- "Sec. 801. Sense of the Senate.
 "Sec. 802. Effective date.

"SEC. 2. DEFINITIONS.

"For purposes of this Act:

"(1) ACCEPT, ACCEPTANCE.-THE TERMS 'ACCEPT' AND 'ACCEPTANCE' MEAN THE SECRETARY'S ACT OF TAKING POSSESSION OF SPENT **NUCLEAR** FUEL OR HIGH-LEVEL RADIOACTIVE WASTE.

"(2) AFFECTED INDIAN TRIBE.-THE TERM 'AFFECTED INDIAN TRIBE' MEANS ANY INDIAN TRIBE-

"(A) WHOSE RESERVATION IS SURROUNDED BY OR BORDERS AN AFFECTED UNIT OF LOCAL GOVERNMENT, OR

"(B) WHOSE FEDERALLY DEFINED POSSESSORY OR USAGE RIGHTS TO OTHER LANDS OUTSIDE OF THE RESERVATION'S BOUNDARIES ARISING OUT OF CONGRESSIONALLY RATIFIED TREATIES MAY BE SUBSTANTIALLY AND ADVERSELY AFFECTED BY THE LOCATING OF AN INTERIM STORAGE FACILITY OR A REPOSITORY IF THE SECRETARY OF THE INTERIOR FINDS, UPON THE PETITION OF THE APPROPRIATE GOVERNMENTAL OFFICIALS OF THE TRIBE, THAT SUCH EFFECTS ARE BOTH SUBSTANTIAL AND ADVERSE TO THE TRIBE.

"(3) AFFECTED UNIT OF LOCAL GOVERNMENT.-THE TERM 'AFFECTED UNIT OF LOCAL GOVERNMENT' MEANS THE UNIT OF LOCAL GOVERNMENT WITH JURISDICTION OVER THE SITE OF A REPOSITORY OR INTERIM STORAGE FACILITY. SUCH TERM MAY, AT THE DISCRETION OF THE SECRETARY, INCLUDE OTHER UNITS OF LOCAL GOVERNMENT THAT ARE CONTIGUOUS WITH SUCH UNIT.

"(4) ATOMIC ENERGY DEFENSE ACTIVITY.-THE TERM 'ATOMIC ENERGY

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"(3) A PLAN AND COST ESTIMATE FOR THE REMAINING WORK REQUIRED TO COMPLETE THE LICENSE APPLICATION UNDER SECTION 206(C) OF THIS ACT, AND

"(4) AN ESTIMATE OF THE COSTS TO CONSTRUCT AND OPERATE THE REPOSITORY IN ACCORDANCE WITH THE PRELIMINARY DESIGN CONCEPT IN PARAGRAPH (1) OF THIS SUBSECTION.

"(B) PRESIDENTIAL DETERMINATION.-NO LATER THAN MARCH 1, 1999, THE PRESIDENT, IN HIS SOLE AND UNREVIEWABLE DISCRETION, MAY MAKE A DETERMINATION DISQUALIFYING THE **YUCCA MOUNTAIN** SITE AS A REPOSITORY, BASED ON THE PRESIDENT'S VIEWS THAT THE PREPONDERANCE OF INFORMATION AVAILABLE AT SUCH TIME INDICATES THAT THE **YUCCA MOUNTAIN** SITE IS NOT SUITABLE FOR DEVELOPMENT OF A REPOSITORY OF USEFUL SIZE. IF THE PRESIDENT MAKES A DETERMINATION UNDER THIS SUBSECTION-

"(1) THE SECRETARY SHALL CEASE ALL ACTIVITIES (EXCEPT NECESSARY TERMINATION ACTIVITIES) AT THE **YUCCA MOUNTAIN** SITE AND SECTION 206 OF THIS ACT SHALL CEASE TO BE IN EFFECT; AND

"(2) NO LATER THAN 6 MONTHS AFTER SUCH DETERMINATION, THE SECRETARY SHALL REPORT TO CONGRESS ON THE NEED FOR ADDITIONAL LEGISLATION RELATING TO THE PERMANENT DISPOSAL OF **NUCLEAR** WASTE.

"(C) PRELIMINARY SECRETARIAL DESIGNATION OF INTERIM STORAGE FACILITY SITES.-

"(1) IF THE PRESIDENT DOES NOT MAKE A DETERMINATION UNDER SUBSECTION (B) OF THIS SECTION, NO LATER THAN MARCH 31, 1999, THE SECRETARY SHALL MAKE A PRELIMINARY DESIGNATION OF A SPECIFIC SITE WITHIN AREA 25 OF THE NEVADA TEST SITE FOR PLANNING AND CONSTRUCTION OF AN INTERIM STORAGE FACILITY UNDER SECTION 205.

"(2) WITHIN 18 MONTHS OF A DETERMINATION BY THE PRESIDENT THAT THE **YUCCA MOUNTAIN** SITE IS UNSUITABLE FOR DEVELOPMENT AS A REPOSITORY UNDER SUBSECTION (B), THE PRESIDENT SHALL DESIGNATE A SITE FOR THE CONSTRUCTION OF AN INTERIM STORAGE FACILITY. THE PRESIDENT SHALL NOT DESIGNATE THE HANFORD **NUCLEAR** RESERVATION IN THE STATE OF WASHINGTON, AND THE SAVANNAH RIVER SITE AND BARNWELL COUNTY IN THE STATE OF SOUTH CAROLINA, OR THE OAK RIDGE RESERVATION IN THE STATE OF TENNESSEE, AS A SITE FOR CONSTRUCTION OF AN INTERIM STORAGE FACILITY. IF THE PRESIDENT DOES NOT DESIGNATE A SITE FOR THE CONSTRUCTION OF AN INTERIM STORAGE FACILITY, OR THE CONSTRUCTION OF AN INTERIM STORAGE FACILITY AT THE DESIGNATED SITE IS NOT APPROVED BY LAW WITHIN 24 MONTHS OF THE PRESIDENT'S DETERMINATION THAT THE **YUCCA MOUNTAIN** SITE IS NOT SUITABLE FOR DEVELOPMENT AS A REPOSITORY, THE INTERIM STORAGE FACILITY SITE AS DEFINED IN SECTION 2(19) OF THIS ACT IS DESIGNATED AS THE INTERIM STORAGE FACILITY SITE FOR PURPOSES OF SECTION 205. THE INTERIM STORAGE FACILITY SITE SHALL BE DEEMED TO BE APPROVED BY LAW FOR PURPOSES OF THIS PARAGRAPH.

"SEC. 205. INTERIM STORAGE FACILITY.

"(a) NON-SITE-SPECIFIC ACTIVITIES.-AS SOON AS PRACTICABLE AFTER THE DATE OF ENACTMENT OF THE **NUCLEAR** WASTE POLICY ACT OF 1997, THE SECRETARY SHALL SUBMIT TO THE COMMISSION A TOPICAL SAFETY ANALYSIS REPORT CONTAINING A GENERIC DESIGN FOR AN INTERIM STORAGE FACILITY. IF THE SECRETARY HAS SUBMITTED SUCH A REPORT PRIOR TO SUCH DATE OF ENACTMENT, THE REPORT SHALL BE DEEMED TO HAVE SATISFIED THE REQUIREMENT IN THE PRECEDING SENTENCE. NO LATER THAN DECEMBER 31, 1998, THE COMMISSION SHALL ISSUE A SAFETY EVALUATION REPORT APPROVING OR DISAPPROVING THE GENERIC DESIGN SUBMITTED BY THE SECRETARY.

"(B) SITE-SPECIFIC AUTHORIZATION.-THE SECRETARY SHALL DESIGN,

CONSTRUCT, AND OPERATE A FACILITY FOR THE INTERIM STORAGE OF SPENT **NUCLEAR** FUEL AND HIGH-LEVEL RADIOACTIVE WASTE AT THE INTERIM STORAGE FACILITY SITE DESIGNATED UNDER SECTION 204 AND LICENSED BY THE COMMISSION UNDER THIS SECTION. THE COMMISSION SHALL LICENSE THE INTERIM STORAGE FACILITY IN ACCORDANCE WITH THE COMMISSION'S REGULATIONS GOVERNING THE LICENSING OF INDEPENDENT STORAGE OF SPENT **NUCLEAR** FUEL AND HIGH-LEVEL RADIOACTIVE WASTE (10 CFR PART 72). SUCH REGULATIONS SHALL BE AMENDED BY THE COMMISSION AS NECESSARY TO IMPLEMENT THE PROVISIONS OF THIS ACT. THE COMMISSION MAY AMEND PART 72 OF TITLE 10, CODE OF FEDERAL REGULATIONS WITH REGARD TO FACILITIES NOT COVERED BY THIS ACT AS DEEMED APPROPRIATE BY THE COMMISSION.

"(C) LIMITATIONS AND CONDITIONS.-

"(1) THE SECRETARY SHALL NOT COMMENCE CONSTRUCTION OF AN INTERIM STORAGE FACILITY (WHICH SHALL MEAN TAKING ACTIONS WITHIN THE MEANING OF THE TERM 'COMMENCEMENT OF CONSTRUCTION' CONTAINED IN THE COMMISSION'S REGULATIONS IN SECTION 72.3 OF TITLE 10, CODE OF FEDERAL REGULATIONS) BEFORE THE COMMISSION, OR AN APPROPRIATE OFFICER OR BOARD OF THE COMMISSION, MAKES THE FINDING UNDER SECTION 72.40(B) OF TITLE 10, CODE OF FEDERAL REGULATIONS.

"(2) AFTER THE SECRETARY MAKES THE PRELIMINARY DESIGNATION OF AN INTERIM STORAGE SITE UNDER SECTION 204, THE SECRETARY MAY COMMENCE SITE DATA ACQUISITION ACTIVITIES AND DESIGN ACTIVITIES NECESSARY TO COMPLETE LICENSE APPLICATION AND ENVIRONMENTAL REPORT UNDER SUBSECTION (D) OF THIS SECTION.

"(3) NOTWITHSTANDING ANY OTHER APPLICABLE LICENSING REQUIREMENT, THE SECRETARY MAY UTILIZE FACILITIES OWNED BY THE FEDERAL GOVERNMENT ON THE DATE OF ENACTMENT OF THE **NUCLEAR** WASTE POLICY ACT OF 1997 AND LOCATED WITHIN THE BOUNDARIES OF THE INTERIM STORAGE SITE, IN CONNECTION WITH ADDRESSING ANY IMMINENT AND SUBSTANTIAL ENDANGERMENT TO PUBLIC HEALTH AND SAFETY AT THE INTERIM STORAGE FACILITY SITE, PRIOR TO RECEIVING A LICENSE FROM THE COMMISSION FOR THE INTERIM STORAGE FACILITY, FOR PURPOSES OF FULFILLING REQUIREMENTS FOR RETRIEVABILITY DURING THE FIRST FIVE YEARS OF OPERATION OF THE INTERIM STORAGE FACILITY.

"(D) LICENSE APPLICATION.-NO LATER THAN 30 DAYS AFTER THE DATE ON WHICH THE SECRETARY MAKES A PRELIMINARY DESIGNATION OF AN INTERIM STORAGE FACILITY SITE UNDER SECTION 204, THE SECRETARY SHALL SUBMIT A LICENSE APPLICATION AND AN ENVIRONMENTAL REPORT IN ACCORDANCE WITH APPLICABLE REGULATIONS (SUBPART B OF PART 72 OF TITLE 10, CODE OF FEDERAL REGULATIONS, AND SUBPART A OF PART 51 OF TITLE 10, CODE OF FEDERAL REGULATIONS, RESPECTIVELY). THE LICENSE APPLICATION-

"(1) SHALL BE FOR A TERM OF 40 YEARS; AND

"(2) SHALL BE FOR A QUANTITY OF SPENT **NUCLEAR** FUEL OR HIGH-LEVEL RADIOACTIVE WASTE EQUAL TO THE QUANTITY THAT WOULD BE EMPLACED UNDER SECTION 507 PRIOR TO THE DATE THAT THE SECRETARY ESTIMATES, IN THE LICENSE APPLICATION, TO BE THE DATE ON WHICH THE SECRETARY WILL RECEIVE AND STORE SPENT **NUCLEAR** FUEL AND HIGH-LEVEL RADIOACTIVE WASTE AT THE PERMANENT REPOSITORY.

"(E) DESIGN.-

"(1) THE DESIGN FOR THE INTERIM STORAGE FACILITY SHALL PROVIDE FOR THE USE OF STORAGE TECHNOLOGIES WHICH ARE LICENSED, APPROVED, OR CERTIFIED BY THE COMMISSION, TO ENSURE COMPATIBILITY BETWEEN THE INTERIM STORAGE FACILITY AND CONTRACT HOLDERS' SPENT **NUCLEAR** FUEL AND FACILITIES, AND TO FACILITATE THE SECRETARY'S ABILITY TO MEET THE

SECRETARY'S OBLIGATIONS UNDER THIS ACT.

"(2) THE SECRETARY SHALL CONSENT TO AN AMENDMENT TO THE CONTRACTS TO PROVIDE FOR REIMBURSEMENT TO CONTRACT HOLDERS FOR TRANSPORTABLE STORAGE SYSTEMS PURCHASED BY CONTRACT HOLDERS IF THE SECRETARY DETERMINES THAT IT IS COST EFFECTIVE TO USE SUCH TRANSPORTABLE STORAGE SYSTEMS AS PART OF THE INTEGRATED MANAGEMENT SYSTEM: *

* *Provided,* That the Secretary shall not be required to expend any funds to modify contract holders' storage or transport systems or to seek additional regulatory approvals in order to use such systems.

"(f) LICENSE AMENDMENTS.-

"(1) THE SECRETARY MAY SEEK SUCH AMENDMENTS TO THE LICENSE FOR THE INTERIM STORAGE FACILITY AS THE SECRETARY MAY DEEM APPROPRIATE, INCLUDING AMENDMENTS TO USE NEW STORAGE TECHNOLOGIES LICENSED BY THE COMMISSION OR TO RESPOND TO CHANGES IN COMMISSION REGULATIONS.

"(2) AFTER RECEIVING A LICENSE FROM THE COMMISSION TO RECEIVE AND STORE SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE IN THE PERMANENT REPOSITORY, THE SECRETARY SHALL SEEK SUCH AMENDMENTS TO THE LICENSE FOR THE INTERIM STORAGE FACILITY AS WILL PERMIT THE OPTIMAL USE OF SUCH FACILITY AS AN INTEGRAL PART OF A SINGLE SYSTEM WITH THE REPOSITORY.

"(g) COMMISSION ACTIONS.-

"(1) THE ISSUANCE OF A LICENSE TO CONSTRUCT AND OPERATE AN INTERIM STORAGE FACILITY SHALL BE CONSIDERED A MAJOR FEDERAL ACTION SIGNIFICANTLY AFFECTING THE QUALITY OF THE HUMAN ENVIRONMENT FOR PURPOSES OF THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (42 U.S.C. 4321 ET SEQ.). PRIOR TO ISSUING A LICENSE UNDER THIS SECTION, THE COMMISSION SHALL PREPARE A FINAL ENVIRONMENTAL IMPACT STATEMENT IN ACCORDANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969, THE COMMISSION'S REGULATIONS, AND SECTION 207 OF THIS ACT. THE COMMISSION SHALL ENSURE THAT THIS ENVIRONMENTAL IMPACT STATEMENT IS CONSISTENT WITH THE SCOPE OF THE LICENSING ACTION AND SHALL ANALYZE THE IMPACTS OF TRANSPORTATION OF SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE TO THE INTERIM STORAGE FACILITY IN A GENERIC MANNER.

"(2) THE COMMISSION SHALL ISSUE A FINAL DECISION GRANTING OR DENYING A LICENSE FOR AN INTERIM STORAGE FACILITY NOT LATER THAN 32 MONTHS AFTER THE DATE OF SUBMITTAL OF THE APPLICATION FOR SUCH LICENSE.

"(3) NO LATER THAN 32 MONTHS FOLLOWING THE DATE OF ENACTMENT OF THE NUCLEAR WASTE POLICY ACT OF 1997, THE COMMISSION SHALL MAKE ANY AMENDMENTS NECESSARY TO THE DEFINITION OF 'SPENT NUCLEAR FUEL' IN SECTION 72.4 OF TITLE 10, CODE OF FEDERAL REGULATIONS, TO ALLOW AN INTERIM STORAGE FACILITY TO ACCEPT (SUBJECT TO SUCH CONDITIONS AS THE COMMISSION MAY REQUIRE IN A SUBSEQUENT LICENSE)-

"(A) SPENT NUCLEAR FUEL FROM RESEARCH REACTORS;

"(B) SPENT NUCLEAR FUEL FROM NAVAL REACTORS;

"(C) HIGH-LEVEL RADIOACTIVE WASTE OF DOMESTIC ORIGIN FROM CIVILIAN NUCLEAR REACTORS THAT HAVE PERMANENTLY CEASED OPERATION BEFORE SUCH DATE OF ENACTMENT; AND

"(D) SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE FROM ATOMIC ENERGY DEFENSE ACTIVITIES.

FOLLOWING ANY SUCH AMENDMENTS, THE SECRETARY SHALL SEEK AUTHORITY, AS NECESSARY, TO STORE SUCH FUEL AND WASTE AT THE INTERIM STORAGE FACILITY. NONE OF THE ACTIVITIES CARRIED OUT PURSUANT TO THIS

PARAGRAPH SHALL DELAY, OR OTHERWISE AFFECT, THE DEVELOPMENT, LICENSING, CONSTRUCTION, OR OPERATION OF THE INTERIM STORAGE FACILITY.

"SEC. 206. PERMANENT REPOSITORY.

"(a) REPOSITORY CHARACTERIZATION.-

"(1) CHARACTERIZATION OF THE **YUCCA MOUNTAIN** SITE.-THE SECRETARY SHALL CARRY OUT SITE CHARACTERIZATION ACTIVITIES AT THE **YUCCA MOUNTAIN** SITE IN ACCORDANCE WITH THE SECRETARY'S PROGRAM APPROACH TO SITE CHARACTERIZATION. SUCH ACTIVITIES SHALL BE LIMITED TO ONLY THOSE ACTIVITIES WHICH THE SECRETARY CONSIDERS NECESSARY TO PROVIDE THE DATA REQUIRED FOR EVALUATION OF THE SUITABILITY OF SUCH SITE FOR AN APPLICATION TO BE SUBMITTED TO THE COMMISSION FOR A CONSTRUCTION AUTHORIZATION FOR A REPOSITORY AT SUCH SITE, AND FOR COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (42 U.S.C. 4321 ET SEQ.).

"(2) GUIDELINES.-THE SECRETARY SHALL AMEND THE GUIDELINES IN PART 960 OF TITLE 10, CODE OF FEDERAL REGULATIONS, TO BASE ANY CONCLUSIONS REGARDING WHETHER A REPOSITORY SITE IS SUITABLE ON, TO THE EXTENT PRACTICABLE, AN ASSESSMENT OF TOTAL SYSTEM PERFORMANCE OF THE REPOSITORY.

"(B) ENVIRONMENTAL IMPACT STATEMENT.-

"(1) PREPARATION OF ENVIRONMENTAL IMPACT STATEMENT.-CONSTRUCTION AND OPERATION OF THE REPOSITORY SHALL BE CONSIDERED A MAJOR FEDERAL ACTION SIGNIFICANTLY AFFECTING THE QUALITY OF THE HUMAN ENVIRONMENT FOR PURPOSES OF THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (42 U.S.C. 4321 ET SEQ.). THE SECRETARY SHALL PREPARE AN ENVIRONMENTAL IMPACT STATEMENT ON THE CONSTRUCTION AND OPERATION OF THE REPOSITORY AND SHALL SUBMIT SUCH STATEMENT TO THE COMMISSION WITH THE LICENSE APPLICATION. THE SECRETARY SHALL SUPPLEMENT SUCH ENVIRONMENTAL IMPACT STATEMENT AS APPROPRIATE.

"(2) SCHEDULE.-

"(A) NO LATER THAN SEPTEMBER 30, 2000, THE SECRETARY SHALL PUBLISH THE FINAL ENVIRONMENTAL IMPACT STATEMENT UNDER PARAGRAPH (1) OF THIS SUBSECTION.

"(B) NO LATER THAN OCTOBER 31, 2000, THE SECRETARY SHALL PUBLISH A RECORD OF DECISION ON APPLYING FOR A LICENSE TO CONSTRUCT AND OPERATE A REPOSITORY AT THE **YUCCA MOUNTAIN** SITE.

"(C) LICENSE APPLICATION.-

"(1) SCHEDULE.-NO LATER THAN OCTOBER 31, 2001, THE SECRETARY SHALL APPLY TO THE COMMISSION FOR AUTHORIZATION TO CONSTRUCT A REPOSITORY AT THE **YUCCA MOUNTAIN** SITE.

"(2) MAXIMIZING CAPACITY.-IN DEVELOPING AN APPLICATION FOR AUTHORIZATION TO CONSTRUCT THE REPOSITORY, THE SECRETARY SHALL SEEK TO MAXIMIZE THE CAPACITY OF THE REPOSITORY, IN THE MOST COST-EFFECTIVE MANNER, CONSISTENT WITH THE NEED FOR DISPOSAL CAPACITY.

"(3) DECISION NOT TO APPLY FOR A LICENSE FOR THE **YUCCA MOUNTAIN** SITE.-IF, AT ANY TIME PRIOR TO OCTOBER 31, 2001, THE SECRETARY DETERMINES THAT THE **YUCCA MOUNTAIN** SITE IS NOT SUITABLE OR CANNOT SATISFY THE COMMISSION'S REGULATIONS APPLICABLE TO THE LICENSING OF A GEOLOGICAL REPOSITORY, THE SECRETARY SHALL-

"(A) NOTIFY THE CONGRESS AND THE STATE OF NEVADA OF THE SECRETARY'S DETERMINATIONS AND THE REASONS THEREFOR; AND

"(B) PROMPTLY TAKE THE ACTIONS DESCRIBED IN PARAGRAPHS (1) AND

ATTACHMENT H

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HEADLINE: Fighting For Lethal Leftovers
Texas farm town sees future in storing toxic plutonium

BYLINE: Kenneth J. Garcia, David Perlman, Chronicle Staff

DATELINE: Amarillo, Texas

BODY:

On the flat, fertile plains of the Texas Panhandle, where wind-whipped rows of wheat and dusty cattle ranches cloud the landscape, the U.S. government is unloading a product that is proving nearly as indestructible as it is deadly.

And the boosters in Amarillo can't get enough of it.

The product is plutonium -- the explosive heart of atom bombs, which is among the most toxic and radioactive of substances. But civic leaders, who want the plutonium stored at the Pantex nuclear assembly plant, see it as a rich resource with incalculable value for everyday citizens.

'The Department of Energy wants to be in a community where it is welcome, and that's certainly the truth here,' said Steve Alhenius, economic director of the Amarillo Chamber of Commerce. 'We feel plutonium is a viable energy source. Who's to say that we won't run out of oil or natural gas someday and might need an alternative source of fuel?'

With no more calls for renewed weapons production, U.S. Cold War colonies such as Amarillo, Aiken and Richland are locked in a competition to decide which will assume the brunt of the country's nuclear materials work during the next century.

This is what has become of the Cold War colonies. With their production lines shut down, their facilities aging and their financing under attack, they are desperately seeking any role within the shrinking weapons network that will provide jobs and money during the coming years.

They are vying, at the behest of the energy department, for the storage rights to a half-century accumulation of nuclear fuels -- a contest further intensified by DOE budget cuts that will cost tens of thousands of jobs from Florida to California in the next few years.

In Amarillo, a place more synonymous with sorghum and beef, that translates into lobbying for surplus plutonium, a substance with a radioactive half-life of 24,390 years. It seems as odd a move as the original choice to place Pantex on



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the Great Plains of Texas, prairie land that served as the railhead for the great cattle drives of the late 1800s and as home to buffalo-hunting Comanches until they were driven out by the U.S. Army.

But to defense officials, Pantex's location almost smack dab in the middle of America made the unrelentingly flat grasslands a logical site as the final assembly point for the nation's nuclear weapons. So it was on this prime farmland that the hub of the nuclear weapons complex was born in secrecy and in silence.

Now, everyone from farmers to high school students visit the high-security plant. Buses filled with tourists whisk by guard towers, concrete bunkers and underground assembly bays where all of the nation's nuclear weapons were put together and where they are now steadily being disassembled.

Every visitor is exposed to a series of briefings, exhibits and fact sheets -- all telling them why Pantex, 17 miles northeast of Amarillo, is the best site for a national plutonium recycling center and for storing up to 20,000 plutonium pits, elements that will require the world's best safekeeping and security.

'One of the issues we have to deal with is the community's willingness to be educated about plutonium,' said Alhenius, the chamber official. 'The problem with most of this country is that anything nuclear is viewed as a negative. That's not the case here.'

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As he looks at the outline of Amarillo from his 15th-floor window inside the Bank of Amarillo building, Jerome Johnson sees a wealth of opportunity for a city that for decades was regarded as an extended truck stop along Route 66.

Measured and eloquent, the white-haired lawyer and co-chair of Panhandle 2000 is the biggest Pantex booster in Amarillo. Nobody really wants plutonium, he said, but it makes sense to keep the pits at Pantex because the explosive elements in the weapons are already there.

'None of the alternatives for storing it are clearly a winner,' he said. 'But they know how to handle it and how to store it. This isn't just a problem for Amarillo, it's a problem for the whole world.'

Unlike Johnson, the nation's scientific community sees only limited options for dealing with plutonium in the future.

Some engineers believe that it could be used to fuel civilian nuclear reactors. But given the substance's tremendous explosive capability and availability of vast amounts the reactor fuel uranium, which is cheaper and easier to use, most physicists believe all efforts should concentrate on finding a safe way to get rid of the plutonium.

For even after the military plutonium is disposed of, the remaining material will have to be stored for tens of thousands of years in some deep repository where neither humans, earthquakes, volcanic activity or subterranean water channels can disrupt the storage sites.



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In the meantime, the boosters in Amarillo believe that Pantex, which has been handling plutonium for 40 years, is the safest place to store the pits. So they hold rallies, hand out buttons and lobby in Washington, D.C., for the right to hold the stuff.

They are also competing against civic interests in Aiken for a tritium-producing accelerator and have helped set up a consortium of Texas universities to study future uses of plutonium and other fissile materials.

'Nobody wants something done out there that would be unsafe, but Pantex has always been accepted on the part of its safety record,' Johnson said. 'There's always been an inventory of plutonium out there and because of the emotions over this issue, the danger of plutonium has been overrated.'

'Everybody involved in this is in the same position: The DOE doesn't need all these sites and we recognize that. But this is about survival, and in the scheme of things, Pantex is a very logical place to survive and to flourish.'

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The razor wire on the 18-foot high cyclone fence at Pantex sparkles in the midday sun, drawing the eyes away from the dusty beige earth piled on top of the concrete bunkers. A guard in an armor-plated Chevrolet Suburban drives by, his face and the 30-caliber submachine gun in the rear hidden by tinted windshields.

Beyond three sets of barbed fences lies Pantex's Zone 4, home to 60 World War II-era steel and concrete 'igloos' that house plutonium pits, the cores of nuclear warheads. The pits confine the explosive plutonium inside steel jackets, and each pit is delicately suspended inside a cushioned canister.

Between the two fences closest to the entrance is an expanse of clay-colored soil that is scanned by high-tech sensors. Two guard towers rise over each side of the area, which is patrolled by a heavily armed SWAT team.

The entrances to the bunkers are covered by massive concrete slab doors with four holes -- the only key being an industrial forklift heavy enough to raise the cement blocks.

'So even if a group of terrorists somehow made it in, they'd have to be carrying one of these (forklifts) in their back pocket to get to the pits,' said Tom Walton, the energy department's spokesman at Pantex.

This is the most secure area in the DOE's nuclear weapon complex, a veritable fortress with layers of security that appear to cover every possible attack. By most expert accounts, the plutonium appears to be safely stored.

Safety is the biggest concern at Pantex. Terrorists and black marketers are secretly trying to acquire enough of the stuff to build at least a crude bomb from stolen plutonium. And it only takes about 4 kilograms -- a ball about the size of a grapefruit -- to make one.

Renegade nations such as Iraq, Iran and North Korea have made no secret of their desire to acquire at least small nuclear arsenals; and there are others such as Israel, India and Pakistan that will not acknowledge the secret atom



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bombs they are known to possess.

But the risk of theft by terrorist is only one part of the safety puzzle.

Energy department officials admit that they do not fully understand the effects of long-term storage of the radioactive metal. The plutonium pits in nuclear weapons were only designed to last 20 to 30 years and the aging process and stability of their containers remain uncertain.

That is among the concerns of residents opposed to Pantex as a short-term storage site, with short-term meaning up to 50 years. A group of auditors found last year that a forklift accident in the bunkers could slam several pits together until the plutonium has a chain reaction and emits lethal radiation. A team of scientists concluded that the plant needs a computerized tracking system to monitor each of the thousands of individual pits.

Beverly Gattis, head of Serious Texans Against Nuclear Dumping, said that despite years of complaints about the site being directly on the flight path of huge military transport planes landing at Amarillo International Airport, the potential for a crash has hardly raised an eyebrow.

"They just said that planes don't fly over Pantex," she said. "So I guess all these years we've been looking at UFO's."

In February, several Pantex employees reported that a small plane had landed near Zone 4. But when security teams rushed out to find the aircraft, they could not even find a tire mark.

"That remains an unknown," is how Walton explained it, adding that huge C-5s and B-52s used by military training crews no longer fly directly over Zone 4. But even as he said that, a green C-5 appeared to line up directly over the security area's stadium lights on its descent over the plant.

"Even if one crashed, it would have to penetrate the bunker, then get through the walls, penetrate the barrels and rupture the pit," he said. "The chances of that happening are pretty remote."

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To outsiders, the energy department's new openness policy, which includes the public tours, has been a slow but welcome change from the agency's cloak-and-dagger past.

But to the workers, it is an unsettling intrusion.

Just ask Dolores Hernandez. Barely 4 foot 10 with a youthful face, Hernandez probably could have sneaked into the auditorium with the Amarillo high school students who have toured Pantex.

Yet her navy blue jumpsuit, with the American flag stitched on the sleeve, gives her away. Hernandez works on "the line," the place where all of nuclear weapons in the U.S. arsenal were once assembled and are now being taken apart.

Hernandez, 37, has worked on the line for 15 years and has been trained in



nearly 10 nuclear weapons systems. She works in one of Pantex's specially designed assembly bays, and until recently would only admit to people that she was employed at the plant. She began as a clerk and then applied for an opening on the then-highly classified assembly line.

'I don't know who told me not to talk, all I know is that it was known that you didn't,' she said. 'That's how we were trained. So it feels strange to talk.'

Hernandez, accompanied by two other line workers during the interview, said that although her job was more stressful during heavy arms buildup periods, such as during the Reagan administration, the increased emphasis on safety, openness and record-keeping makes life difficult at Pantex.

'It seems like everything we do is now viewed under a microscope,' she said. 'Ten years ago, the atmosphere was much more to get the product out the door. But now, there's a lot of uncertainty.'

Like the vast majority of Pantex workers, Hernandez supports the energy department's plan for plutonium storage at Pantex. She thinks it all can be done quite safely, but then, she has been marrying high explosives with plutonium in missiles for more than a decade.

'Everyone just learns to respect it,' she said. 'You have to remember that there aren't any other jobs like this. I mean, where can I go to find work when I tell people that for the last 15 years I've assembled nuclear weapons?'

* - - -

On a warm spring day, the Pantex site is permeated by the smell of the adjoining IBP plant, one of the country's largest beef processing plants, a sprawling, high-tech slaughterhouse.

For years, the farmers who live around the 16,000-acre plant said they consciously looked the other way while Pantex workers were efficiently assembling thousands of nuclear warheads.

But when the energy department, in conjunction with the Panhandle 2000 boosters group, made a grab for their land a few years back, the farmers rebelled.

Ronnie and Trish Neusch, who raised four children in their farmhouse on the western edge of Pantex, were among those who accidentally found out that their wheat, cane and milo fields had been offered to the department by the group supporting Pantex's expansion.

Indeed, under the plan, all farms within a mile radius of the plant would have been sacrificed, while the boosters promised to supply the agency with all the utilities, roads and water that it might require.

'Land acquisition involves only a small number of landowners and should proceed quickly and without significant complications,' according to the boosters' proposal. The farmers were never even notified.



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The move turned into a public relations nightmare, uniting the farmers for the first time in decades against the plant, forcing numerous public hearings, environmental studies and, ultimately, killing the Pantex expansion plan.

The farmers organized their own groups, including Panhandle Area Neighbors and Landowners and Save Texas Agriculture and Resources. They hooked up with other advocates and began a crash education course on the history of Pantex and other weapons sites.

And they did not like what they learned. The farmers were particularly worried that any toxic waste released at Pantex might seep into the Ogallala Aquifer, which sits several hundred feet beneath the site. The Ogallala is the largest aquifer in the United States, running from South Dakota to north Texas.

Jim and Jeri Osborne, who for more than 40 years have lived with explosions shaking their walls, security guards roaming their pastures and Pantex's stadium lights turning their nights into days, have no problem with the plant carrying out its post-Cold War mission to disassemble the country's nuclear weapon stockpile.

But the energy department's desire to store up to 20,000 plutonium pits has triggered a chain reaction even among many conservative Republicans such as the Osbornes.

After living so long with the fitful bureaucracy of the nuclear weapons industry, the Osbornes now find it difficult to believe the promises of a safe and secure future at Pantex, especially with polluted graveyards such as Hanford and Rocky Flats serving as symbols of the department's darkest side.

"For years they told us that planes don't fly over the plant, even though we can watch them out our window," Jim Osborne said. "They've told us that no radiation has escaped the plant, even when they've had accidental releases. And now they want to store all of the plutonium in the United States here."

Trish Neusch said the biggest problem centers on trust. After four decades of living with secrecy and lies, she asks, why should people start believing that everything is safe and secure?

"Can you imagine," she said, "turning one of the leading agricultural areas in America into a nuclear waste depository?"

"We always had the mind-set here of taking the worst the government had to offer, but that all changed. If this plan goes ahead, we run the real risk of having all the plutonium in the U.S. stored in our back yard and then having the federal government just walk away someday."

* -- --

As Aiken and Richland and Amarillo struggle with their changing roles in the post-Cold War era, the federal government is grappling with the toughest question of all: what to do with all the lethal leftovers from the decades of arms buildup.

So far, only one permanent repository has been designated for for nuclear



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wastes and it is being developed primarily to store spent fuel elements from the civilian nuclear power industry.

It is a series of caverns excavated in the depths of Yucca Mountain and located inside the energy department's heavily-guarded Nevada Test Site 65 miles north of Las Vegas.

If approved, the Yucca Mountain repository will cost billions of dollars. The proposed storage facility has some severe limits. Although the site would be designed to hold the wastes for thousands of years, its storage capacity will not allow more than the 600 tons of plutonium now being held temporarily in spent fuel rods at civilian nuclear power plants across the country.

Within the past month, scientists at the Los Alamos National Laboratory have raised a new problem, warning that their calculations indicate the masses of nuclear fuel to be deposited there might ultimately corrode their containers and trigger huge nuclear explosions inside the mountain.

Nevada's **governor** and legislature have opposed the Yucca Mountain project as a major safety hazard from the beginning, and powerful political forces are lining up against it.

"The whole problem is a heritage of the Cold War today, and arms controllers and environmentalists are often pitted against each other, even though they have the same goal -- to prevent humanity from being irreparably damaged," says Wolfgang K. H. Panofsky, the renowned Stanford physicist.

"The problem simply won't go away," he admits, "and we can't really solve it. All we can do is minimize the risks."

THE PANTEX PLANT

The Pantex Plant is located in the Texas Panhandle on 16,000 acres 17 miles northeast of Amarillo. It was constructed by the Army in 1942 as a conventional bomb plant, decommissioned after World War II and sold to Texas Tech University as excess government property. In 1951 the Atomic Energy Commission asked that 10,000 acres of the site be used for nuclear weapons work. During the mid 1960s, Pantex experienced its first expansion with the assumption of weapons maintenance and modification tasks from plants that closed in San Antonio and Clarksville Tenn. The second expansion came with the closing of a plant in Burlington, Iowa in 1975. The Pantex Plant has been the only U.S. nuclear weapons assembly/disassembly plant since Burlington closed

CHART:

DISMANTLING NUCLEAR WEAPONS

* Where nuclear bombs are dismantled

Outside view (above) of assembly/disassembly cells, or 'Gracel Gerties' at the Pantex plant. The circular structures are about 33 feet in diameter and have about 17 feet of gracel on the roof. These facilities are designed for the portion of the assembly or disassembly where the chemical high explosive



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material and nuclear package are put together or separated. Pantex has 13 of these units.

* Number of nuclear weapons dismantled at Pantex.

The Pantex Plant is the United States' main site for weapons dismantlement. weapon design varies greatly, requiring a range of methods to safely disassemble and dispose of the materials. Nuclear bombs and most nuclear artillery shells are returned to Pantex intact. Only the warheads from missiles are returned; launch vehicles are disposed of elsewhere. Disassembly occurs in the 'Gravel Gerties' and may take days to weeks to complete

YEAR NUMBER OF WEAPONS

1989 1,208

1990 1,151

1991 1,595

1992 1,303

1993 1,556

1994 1,371

Source: U.S. Department of Energy

CHRONICLE GRAPHIC

EC:

GRAPHIC: PHOTO (7), GRA, (1) A field near the Pantex nuclear assembly plant was plowed, farmers fought a plan to expand the plant, (2) Activist Beverly Gaddis and Energy Department official Tom Williams have been discussing Pantex's future, (3) Sixty steel and concrete bunkers at the Pantex site, house the explosive cores of nuclear warheads, known as 'plutonium pits', (4) Jeri Osborne, whose home is close to the plant that explosions there shake her walls, has been tracking cancer cases in areas surrounding Pantex, (5) Panhandle 2000 President Jerome Johnson looked out over Amarillo, whose downtown is dotted with em

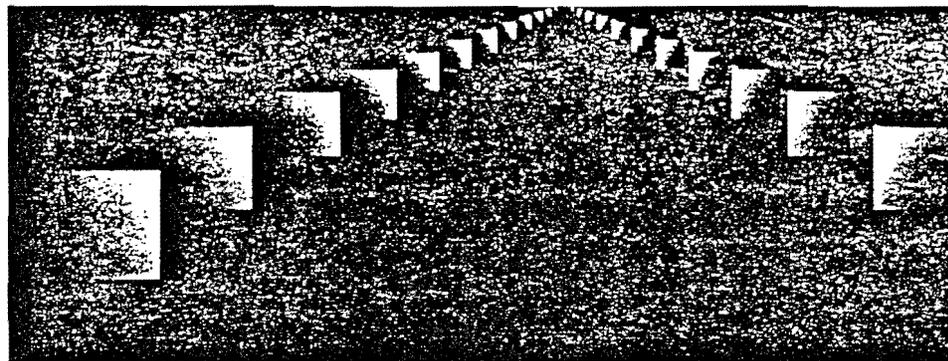
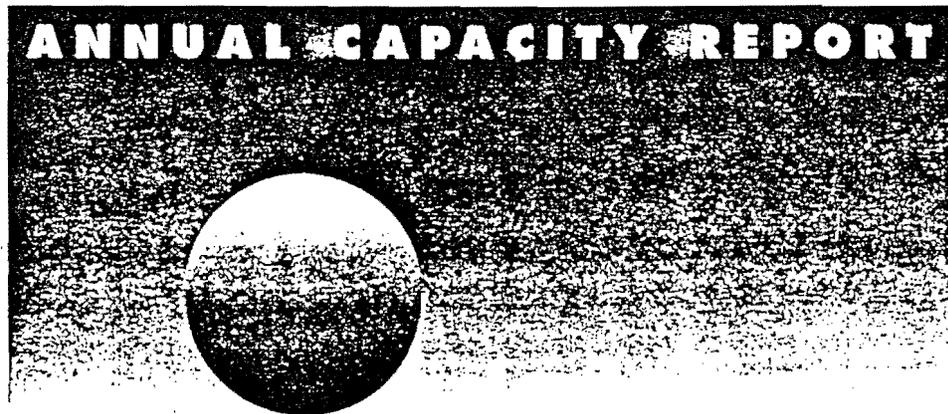
LANGUAGE: ENGLISH

LOAD-DATE: April 13, 1995



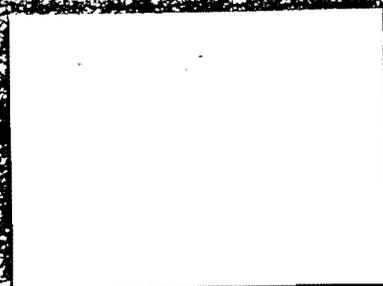
ATTACHMENT I

ACCEPTANCE PRIORITY RANKING
&



U . S . D E P A R T M E N T O F E N E R G Y
O F F I C E O F C I V I L I A N R A D I O A C T I V E W A S T E M A N A G E M E N T
W A S H I N G T O N , D C 2 0 5 8 5

M A R C H 1 9 9 5



1.0 INTRODUCTION

The Nuclear Waste Policy Act of 1982, as amended (the Act)¹, assigns the Federal Government the responsibility for the disposal of spent nuclear fuel and high-level waste. The Director of the Department of Energy's Office of Civilian Radioactive Waste Management (the Department) is responsible for carrying out the functions assigned to the Secretary of Energy by the Act. Section 302(a) of the Act authorizes the Secretary to enter into contracts^{*} with the owners and generators^{**} of commercial spent nuclear fuel and/or high-level waste. The Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste² (Standard Contract) established the contractual mechanism for the Department's acceptance and disposal of spent nuclear fuel and high-level waste. It includes the requirements and operational responsibilities of the parties to the Standard Contract in the areas of administrative matters, fees, terms of payment, waste acceptance criteria, and waste acceptance procedures. The Standard Contract provides for the acquisition of title to the spent nuclear fuel and/or high-level waste by the Department, its transportation to Federal facilities, and its subsequent disposal.

The Standard Contract requires the Department to issue an annual Acceptance Priority Ranking (APR) report and an Annual Capacity Report (ACR). The APR establishes the order in which the Department allocates the projected acceptance capacity for commercial spent nuclear fuel. The ACR applies projected nominal acceptance rates for the system to the priority ranking in the APR, resulting in individual allocations for the owners and generators expressed in metric tons of uranium (MTU). These capacity allocations, as listed in the ACR, form the basis for the Purchasers' submittal of Delivery Commitment Schedules (DCS). As specified in the Standard Contract, the ACR is for planning purposes only and, thus, is not contractually binding on either DOE or the Purchasers.

¹Individual contracts are based upon the Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste (10 CFR Part 961).

^{**}Owners and generators of spent nuclear fuel and high-level waste who have entered into agreements with the Department and/or have paid fees for purchase of disposal services are referred to as "Purchasers."

In reviewing the data provided by Purchasers for preparation of the 1993 APR, the Department determined that discrepancies in the weights of the discharged fuel assemblies existed. These discrepancies were between the information provided by Purchasers on Annex B to Appendix G of the Standard Contract and information being provided by Purchasers on the Nuclear Fuel Data Form, RW-859. The Department initiated a review to determine the cause of these discrepancies in order to ensure consistency and accuracy of the detailed information used in the APR. This review, which was limited to fuel that was permanently discharged, incore, or temporarily discharged as of April 7, 1983, resulted in numerous minor adjustments to previously reported APR values. Previous editions of the APR, which reported discharges to a 0.01 MTU level of precision, required numerous adjustments as Purchasers implemented various fuel management activities. The Department has determined that this level of precision is not necessary for allocating nominal waste acceptance capacity. Therefore, beginning with this publication, all discharges in the APR will be listed to the 0.1 MTU level of precision. Consequently, the ACR and subsequent DCS reviews will also be to the 0.1 MTU level of precision. Since this change in precision was applied uniformly to the entire APR, changes from the 1992 report caused by the change in precision are not individually explained, however all other changes reported by the Purchasers are listed and explained in Appendix C. In all cases, adjustments to previously reported values have been made by rounding up to the next highest 0.1 MTU. An annual nominal waste acceptance capacity was used to assure that no Purchaser had been impacted adversely with respect to a waste acceptance allocation as compared to an allocation reported in previous editions of the ACR.

The length and thoroughness of this review delayed the issuance of the 1993 ACR and APR. The information from the 1993 APR and ACR is combined with this report. In an effort to reduce the administrative burden associated with the publication of separate ACR and APR reports, the Department has decided to issue a consolidated APR/ACR Report for 1994 and subsequent years. The 1994 APR/ACR Report has been printed in a loose-leaf binder format, to allow for the updating of selected pages rather than revision of the entire report.

1.1 BASIS FOR THE ACCEPTANCE PRIORITY RANKING

As required by the Standard Contract, the APR is based on the date the spent nuclear fuel was permanently discharged, with the oldest spent nuclear fuel, on an industry-wide basis, given the highest priority. The phrase "date the spent nuclear fuel was permanently discharged" means the date the reactor went subcritical for the purpose of permanently discharging the spent nuclear fuel, as reported to the Department by the Purchasers on the Nuclear Fuel Data Form, RW-859. The APR is the basis for allocating projected spent nuclear fuel (SNF) acceptance capacity in the ACR. The 1994 APR listing is based on SNF discharges through December 31, 1993. The APR listing has been included as Appendix A.

Revisions to the information base of this APR were, and in the future will be, addressed consistent with the Department's May 15, 1991, communication on the opportunity to verify the accuracy of the information contained in the draft version of the 1991 APR. Discharges that were not identified during the comment period on the draft 1991 APR were assigned a Ranking Date (i.e. the end of the priority ranking of the report year). Future discharges will be added to the priority ranking based on their date of permanent discharge. If SNF currently designated as temporarily discharged is redesignated as permanently discharged (without subsequent irradiation), the date of redesignation will become the Ranking Date, instead of the date of actual discharge. Reinserted assemblies, previously designated as permanently discharged, will be removed from the priority ranking. Appendix C itemizes all of the differences between the 1992 APR and the 1994 APR which have resulted in changes to the overall ranking.

1.2 BASIS FOR THE ANNUAL CAPACITY REPORT

The ACR (see Appendix B) applies a 10-year projected nominal waste acceptance rate to the APR, resulting in individual capacity allocations. In the previous ACR, the projected nominal acceptance rate was based on the assumption of SNF acceptance beginning in 1998 at a Monitored Retrievable Storage facility prior to repository operations. Due to the uncertainty associated with the date of commencement of operation of the waste management system, the annual nominal waste acceptance rates are presented by year(s) of operation of the system rather

than by specific calendar year(s). The projected nominal acceptance rates also reflect the capacity limit imposed by the Act on such a storage facility prior to repository operations. These projected nominal waste acceptance rates are presented in Table 1. The Department will continue to process DCS submittals on an annual basis.

Table 1. Projected Nominal Waste Acceptance Rates for Spent Nuclear Fuel

<u>Year</u>	<u>SNF (MTU)</u>
Year 1	400
Year 2	600
Year 3	900
Year 4	900
Year 5	900
Year 6	900
Year 7	900
Year 8	900
Year 9	900
Year 10	<u>900</u>
TOTAL	8,200

Operation of the system with the nominal waste acceptance rates presented in Table 1 will result in the acceptance of 8,200 MTU of SNF for the first 10 years. This table provides only an approximation of the system throughput rates and is subject to change depending on Congressional action regarding the conditions for the siting, construction, and operation of an interim storage facility, if any, the repository, and the system design and configuration. The Department will further define and specify the system operating and waste acceptance parameters as the Program progresses, and inform the Purchasers accordingly. Until the SNF is accepted by the Department, Section 111(a)(5) of the Act assigns the waste owners and generators the primary responsibility to provide for, and pay the costs of, interim storage.

The Tables in Appendix B list the Purchasers' annual allocations for each of the first 10 years*** of projected CRWMS operation. Table 2 presents a summary of all Purchasers' annual allocations based on the nominal waste acceptance rates for the 10-year period covered by this report. Fuel assembly reinsertions identified during the reporting period ending December 31, 1993, have resulted in changes to the APR. Additionally, modifications have been made to reflect changes in weight of certain fuel assemblies as determined from the review of the Annex B information. The allocations in years 1 to 10 have been adjusted to reflect; 1) reinsertions of SNF previously identified as being permanently discharged; 2) cycle discharge date correction; and 3) updated weights from Annex B information. However, the projected nominal waste acceptance rates were adjusted for each of the allocation years so that the acceptance queue would not be impacted. The notes to Appendix B, Tables B.1 through B.10, identify and document the reasons for the changes affecting the first 10 years of projected CRWMS operation.

*** The term "year," when used in reference to capacity allocation in this report, means the calendar year, beginning January 1 and ending December 31.

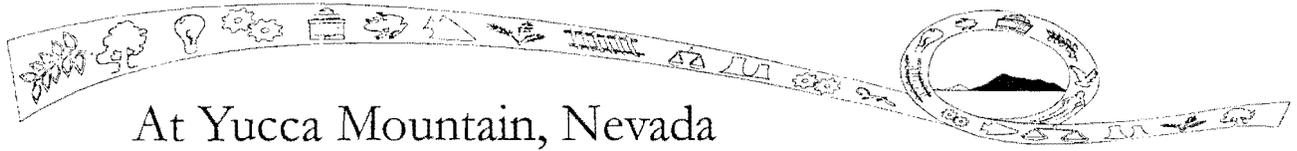
TABLE 2. SUMMARY OF PURCHASERS' ANNUAL ALLOCATIONS (MTU)^a

PURCHASER	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	TOTAL
ALABAMA POWER COMPANY	--	--	--	--	--	21.2	--	--	24.4	12.9	58.5
ARIZONA PUBLIC SERVICE	--	--	--	--	--	--	--	--	--	--	--
ARK POWER & LIGHT COMP	--	--	--	23.3	28.2	--	30.2	--	46.4	--	128.1
BABCOCK AND WILCOX COM	--	--	0.1	0.1	--	--	--	--	--	--	0.1 ^b
BALTIMORE GAS & ELEC C	--	--	--	12.6	41.5	28.5	52.2	--	55.3	29.6	219.7
BOSTON EDISON COMPANY	--	3.9	25.5	82.6	--	--	11.5	5.6	--	42.7	171.8
CAROLINA POWER & LIGHT	--	70.1	24.3	23.7	50.5	32.1	20.6	93.1	--	49.6	364.0
CLEVELAND ELEC ILLUM C	--	--	--	--	--	--	--	--	--	--	--
COMMONWEALTH EDISON CO	21.1	60.5	154.5	121.9	164.2	175.3	66.9	107.8	98.2	98.3	1068.7
CONNECTICUT YANKEE ATO	65.5	22.5	19.8	21.8	21.9	20.2	--	21.9	--	21.9	215.5
CONSOLIDATED EDISON CO	3.0	27.7	32.8	--	27.1	--	28.3	2.3	22.2	--	143.4
CONSUMERS POWER COMPAN	--	2.5	87.4	2.7	27.4	3.5	26.5	--	2.9	30.8	183.7
DAIRYLAND POWER COOP	0.8	6.0	3.0	3.9	--	3.4	--	--	1.5	3.3	21.9
DETROIT EDISON COMPANY	--	--	--	--	--	--	--	--	--	--	--
U.S. DOE	22.8	6.4	3.3	4.5	7.3	72.9	16.4	--	3.3	20.0	156.9
DUKE POWER COMPANY	--	24.9	47.7	62.5	58.4	56.2	61.2	31.6	63.5	66.4	472.4
DUQUESNE LIGHT COMPANY	--	--	--	--	--	--	16.2	--	--	24.4	40.6
FLORIDA POWER & LIGHT	--	20.9	37.0	40.5	32.9	40.9	71.4	33.1	52.2	37.7	366.6
FLORIDA POWER CORP	--	--	--	--	1.4	--	26.1	20.5	--	30.2	78.2
G. E. URANIUM MGT.	145.2	--	--	--	--	--	--	--	--	--	145.2
GENERAL ATOMICS	0.1	0.1	--	--	0.1	--	--	0.1	0.1	0.1	0.1 ^b
GEORGIA POWER COMPANY	--	--	--	0.8	4.5	--	35.3	--	56.4	15.2	112.2
GPU NUCLEAR	31.1	43.0	46.8	49.5	33.9	55.3	--	27.6	--	--	287.2
GULF STATES UTILITIES	--	--	--	--	--	--	--	--	--	--	--
HOUSTON LIGHTING & POW	--	--	--	--	--	--	--	--	--	--	--
IES UTILITIES, INC.	--	--	15.4	13.9	21.8	0.8	--	16.6	15.5	--	84.0
ILLINOIS POWER COMPANY	--	--	--	--	--	--	--	--	--	--	--
INDIANA & MICH ELEC CO	--	--	--	28.6	29.2	--	62.5	27.9	69.8	--	218.0
KANSAS GAS AND ELECTRI	--	--	--	--	--	--	--	--	--	--	--
LONG ISLAND POWER AUTH	--	--	--	--	--	--	--	--	--	--	--
LOUISIANA POWER AND LI	--	--	--	--	--	--	--	--	--	--	--
MAINE YANKEE ATOMIC	--	26.4	57.9	27.3	--	50.7	--	26.3	28.2	--	216.8
MISSISSIPPI POWER & LI	--	--	--	--	--	--	--	--	--	--	--
NEBRASKA PUB POWER DIS	--	--	--	23.6	13.8	--	31.2	28.7	21.0	--	118.3
NEW YORK POWER AUTH	--	--	--	25.9	3.7	51.1	34.7	30.0	--	69.8	215.2
NORTH ATLANTIC ENERGY	--	--	--	--	--	--	--	--	--	--	--
NIAGARA MOHAWK POWER C	9.4	49.0	38.9	30.8	--	31.2	--	--	36.9	--	196.2
NORTHEAST UTIL SVC COM	5.5	40.7	28.2	24.3	41.9	26.6	28.1	59.1	--	28.4	282.8
NORTHERN STATES POWER	--	26.2	83.6	29.9	33.9	17.6	32.6	43.3	35.7	16.1	318.9
OMAHA PUB POWER DIST	--	--	9.4	12.9	19.0	16.4	--	14.8	--	14.6	87.1
PACIFIC GAS AND ELECT	7.3	6.0	2.6	13.3	--	--	--	--	--	--	29.2
PENNSYLVANIA POWER & L	--	--	--	--	--	--	--	--	--	--	--
PHILADELPHIA ELEC COMP	--	--	36.3	68.1	47.7	48.8	51.7	51.3	40.6	50.8	395.3
PORTLAND GENERAL ELEC	--	--	--	--	0.5	--	--	24.4	16.1	17.0	58.0
PUB SVC COMPANY OF COL	--	--	--	--	--	--	--	--	--	--	--
PUB SVC ELEC & GAS COM	--	--	--	--	--	--	17.5	29.5	--	25.8	72.8
ROCHESTER GAS & ELEC	32.0	4.6	24.4	16.1	16.2	15.7	--	14.2	5.9	6.8	135.9
SACRAMENTO MUNICIPAL UTI	--	--	--	9.3	--	26.0	--	30.2	19.0	--	84.5
SOUTH CAROLINA ELEC &	--	--	--	--	--	--	--	--	--	--	--
SOUTHERN CALIF EDISON	35.6	20.5	19.3	19.3	--	19.2	--	19.3	--	--	133.2
TENNESSEE VALLEY AUTHO	--	--	--	--	58.7	5.5	115.6	66.0	116.2	52.4	414.4
TEXAS UTILITIES GENERA	--	--	--	--	--	--	--	--	--	--	--
TOLEDO EDISON COMPANY	--	--	--	--	--	--	--	--	--	25.1	25.1
UNION ELEC COMPANY	--	--	--	--	--	--	--	--	--	--	--
VERMONT YANKEE NUCLEAR	--	72.9	--	12.0	8.7	27.5	25.7	17.0	--	22.2	186.0
VIRGINIA POWER	--	8.2	69.4	43.9	54.7	20.2	23.4	32.9	29.0	52.8	334.5
WASH PUB POWER SUPPLY	--	--	--	--	--	--	--	--	--	--	--
WISCONSIN ELEC POWER C	16.3	43.1	19.8	27.1	36.8	24.9	9.7	12.9	16.1	21.8	228.5
WISCONSIN PUB SVC CORP	--	--	4.4	17.7	16.1	--	5.3	13.3	16.5	14.5	87.8
YANKEE ATOMIC ELEC COM	9.9	10.1	9.7	8.7	--	9.4	--	--	8.5	--	56.3
NOMINAL TOTAL	400.0	600.0	900.0	900.0	900.0	900.0	900.0	900.0	900.0	900.0	8200.0

a All allocations have been adjusted from the 1992 ACR to reflect the change in the degree of precision.
b These totals are not the sum of the annual allocations because the actual annual values are much less than .1 MTU.

ATTACHMENT J

Environmental Impact Statement For A Proposed Repository



At Yucca Mountain, Nevada

Summary of Public Scoping Comments

Related to the

Environmental Impact Statement

for a Geologic Repository for the Disposal

of Spent Nuclear Fuel and High-Level Radioactive Waste

at Yucca Mountain, Nye County, Nevada



May 1997

U.S. Department of Energy
Yucca Mountain Site Characterization Office

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ACRONYMS

CFR - Code of Federal Regulations

DOE - Department of Energy

EIS - Environmental Impact Statement

FR - Federal Register

HLW - high-level radioactive waste

MTHM - metric tons of heavy metal

NEPA - National Environmental Policy Act

NTS - Nevada Test Site

NWPA - Nuclear Waste Policy Act

SNF - spent nuclear fuel

1. INTRODUCTION

1.1 PURPOSE AND ORGANIZATION OF THE DOCUMENT

The U. S. Department of Energy (DOE) is evaluating in the *Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* [Repository Environmental Impact Statement (EIS)] the proposal to construct, operate, and permanently close a geologic repository [*Federal Register* (FR) 1995a]. This comment summary document summarizes comments and issues identified during the public scoping process and indicates the general approach for addressing issues in the Repository EIS.

Section 1 describes the history and scope of the Repository EIS, the alternatives being evaluated in the EIS, and related National Environmental Policy Act (NEPA) reviews. Section 2 summarizes the major issues identified during the public scoping process for the Repository EIS and describes a general approach for what will be addressed in the EIS. Appendix A contains comment summaries compiled by DOE based on the public comments received during the public scoping process for the Repository EIS.

On July 9, 1996, DOE published a final rule in the *Federal Register* that, among other things, eliminated the requirement to prepare an implementation plan [formerly in Section 1021.312 of DOE NEPA regulations at 10 Code of Federal Regulations (CFR) Part 1021]. This change was made to simplify the DOE NEPA process, reduce cost, and save time. The elimination of the implementation plan does not, however, relinquish the requirement to consider public scoping comments and factor them into the preparation of an EIS. This document summarizes and categorizes comments received during the public scoping process into issue areas to discuss what issues will be addressed in the EIS. The intent is not to provide a direct response to every question that was asked during the public scoping period. Preparation of this document fulfills DOE's commitment, made during the EIS scoping process, to inform the public of the outcome of that process.

1.2 BACKGROUND

The Nuclear Waste Policy Act of 1982, as amended, (NWPA) directs the DOE to evaluate the suitability of the Yucca Mountain site in southern Nevada as a potential site for development of a geologic repository for the disposal of spent nuclear fuel (SNF) and high-level radioactive waste (HLW). If the Secretary of Energy determines that the Yucca Mountain site is suitable, the Secretary may then recommend that the President approve the site for development of a repository. Under the NWPA, such a recommendation must be accompanied by a Final EIS. Therefore, DOE is preparing the Repository EIS to support a potential recommendation for development of a repository at Yucca Mountain. The NWPA also directs the Nuclear Regulatory Commission to adopt DOE's Repository EIS, to the extent practicable, in connection with any

subsequent construction authorization and license that the Commission issues to DOE for the repository.

As discussed in the Notice of Intent, the proposed action is to construct, operate, and eventually close a repository at Yucca Mountain for the geologic disposal of 63,000 metric tons of heavy metal (MTHM) of commercial SNF and 7,000 MTHM of DOE SNF (includes SNF from the Navy Nuclear Propulsion Program) and HLW (FR 1995a). The NWPA states that the EIS does not have to discuss the need for a repository, alternatives to geologic disposal, or alternative sites to Yucca Mountain. DOE identified three alternatives to implement the proposed action based on thermal load objectives; namely, a high thermal load, an intermediate thermal load, and a low thermal load. For each implementing alternative, packaging and transportation options will also be considered.

During the scoping period, DOE received many comments noting the existence of SNF and HLW in excess of 70,000 MTHM, and encouraging DOE to evaluate the total projected inventory of SNF and HLW. In addition, some commentors requested that the EIS evaluate the disposal of other highly radioactive waste types that may require permanent isolation, consistent with related DOE NEPA reviews and other DOE planning documents. Other commentors noted that DOE has a responsibility to start accepting waste shipments prior to the projected 2010 start of repository operations.

Based on the comments received, DOE is considering presenting incremental analyses for the disposal of all projected SNF and HLW, as well as other highly radioactive waste types that may require permanent isolation, and/or incremental analyses for receipt of waste at Yucca Mountain prior to full operation of the repository. It should be noted that any DOE decisions based in part on analyses presented in the Repository EIS must be consistent with the provisions of the NWPA and other applicable law. In addition under the NWPA, the Nuclear Regulatory Commission decision approving the first repository license application shall prohibit the emplacement in the first repository of more than 70,000 MTHM of SNF and HLW, until such time as a second repository is in operation.

Figure 1-1 provides a timeline representation of the current schedule for preparation of the Repository EIS.

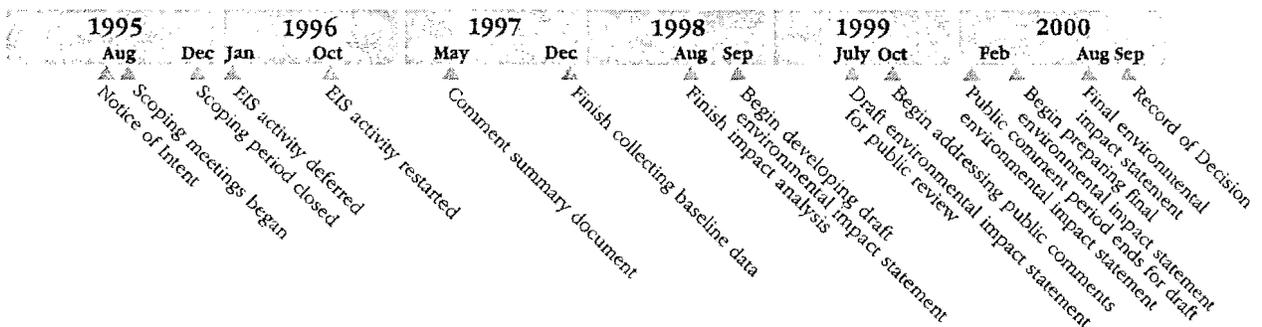


Figure 1-1. Repository EIS Timeline

1.3 ALTERNATIVES TO BE EVALUATED IN THE REPOSITORY ENVIRONMENTAL IMPACT STATEMENT

The proposed action is to construct, operate, and eventually close a repository at Yucca Mountain for the geologic disposal of 63,000 MTHM of commercial SNF and 7,000 MTHM of DOE SNF and HLW. Four alternatives will be evaluated: three alternatives to implement the proposed action and the No Action alternative. The implementing alternatives will be based on thermal load objectives: a high thermal load that considers the emplacement of more than 80 MTHM per acre, an intermediate thermal load of between 40 and 80 MTHM per acre, and a low thermal load of less than 40 MTHM per acre. Each of the thermal loads would produce different underground configurations for the subsurface repository. The configuration would change in size and layout to accommodate emplacement of the waste (i.e., lower thermal loads would require larger underground areas because the waste would be more widely spaced.)

As part of each implementing alternative, two packaging options will be evaluated. Under Option 1, SNF assemblies would be packaged and sealed in multi-purpose canisters at the generator sites prior to being transported in casks to the repository. HLW would be packaged and sealed in canisters prior to shipment in similar casks. Under Option 2, SNF assemblies (without canisters) and sealed canisters of HLW would be transported in casks to the repository.

For each implementing alternative, five transportation options will also be evaluated: two national and three regional (i.e., within the state of Nevada). The first national option would be to ship nuclear fuel and HLW by truck, from the generator site to the repository. The second national option would be to ship by rail, except from those generator sites that do not have access to an existing rail line. For the three regional transportation options, two apply to shipments that would arrive in Nevada by rail, and the third applies to shipments that would arrive in Nevada by truck. The first regional transportation option would be to ship by rail to the repository. The second regional transportation option would be to ship by rail to an intermodal transfer facility for transfer to heavy haul trucks, which would then transport the shipments to the repository. The third regional transportation option would be to use legal weight trucks to ship from the generator sites directly to the repository.

As noted above, based on comments received, DOE is considering evaluating expanded inventory "modules" in the EIS to analyze the disposal of all projected SNF and HLW, as well as other highly radioactive waste types that may require permanent isolation. DOE is also considering evaluating receipt of waste at Yucca Mountain prior to full operation of the repository.

Under the No Action alternative, a geologic repository at the Yucca Mountain site would not be constructed. SNF and HLW would continue to accumulate at the 75 commercial nuclear reactor sites and at DOE facilities. The existing tunnel excavation equipment and facilities at the Yucca Mountain site (for example, the Exploratory Studies Facility and support facilities) could be reclaimed, dismantled and removed for reuse, recycling, or disposal as appropriate.

The No Action alternative will be analyzed by evaluating a generic commercial nuclear reactor site and continued storage of waste at DOE facilities. The commercial site and DOE facilities would continue to operate for 100 years to ensure public health and safety. After 100 years, it is assumed that institutional control would be lost. Storage containers at commercial sites would be routinely monitored for corrosion and repackaged as necessary to comply with safety requirements. The DOE-owned SNF and HLW would continue to be stored at the Hanford Site, the Idaho National Engineering and Environmental Laboratory, and the Savannah River Site. It is assumed storage facilities at DOE sites would be upgraded or built as necessary.

The impacts to the environment at commercial nuclear sites will be assessed generically using existing environmental documentation prepared for license applications for these commercial facilities. The impacts will be assessed for two periods of time. The first time frame would be equivalent to the preclosure phase (disposal and caretaker) at the Yucca Mountain site (up to 100 years) and for purposes of analysis it will be assumed that institutional controls, such as monitoring and maintenance, would be maintained. The second time frame would, for purposes of analysis only, consider a long-term loss of institutional control, and would parallel the 100 year analysis period for the action alternatives.

1.4 RELATED NEPA REVIEWS

The DOE and other federal agencies (i.e., the Department of Defense) have completed, are in the process of preparing, or anticipate preparing NEPA documents that could affect the scope of this EIS. The actions under evaluation in these NEPA documents relate primarily to ongoing and proposed defense waste management, environmental restoration, non-defense research and development, and work for other DOE programs as well as non-DOE actions proposed by other federal agencies. These EISs are briefly described below.

The Environmental Assessment, Yucca Mountain Site, Nevada Research and Development Area, Nevada, DOE/RW-0073, evaluated the Yucca Mountain in accordance with the DOE's General Guidelines for the Recommendations of Sites for the Nuclear Waste Repositories and found Yucca Mountain suitable for site characterization (DOE 1986).

The Yucca Mountain site lies partly on and partly adjacent to the Nevada Test Site (NTS). As such, proposed actions at the NTS could affect the scope of the Repository EIS. The *Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada*, DOE/EIS-0243, identifies a preferred alternative where the NTS would be made available for increased use by DOE to support national defense and nondefense programs (DOE 1996a). The preferred alternative reflects the need to maintain readiness to conduct nuclear-weapons tests, to manage a variety of radioactive wastes, and to restore parts of the NTS that have been contaminated by past DOE activities. Under the preferred alternative, the use of the NTS for other defense purposes would expand, and technological innovation in both the public and private sectors (e.g., to develop economical solar power) would also be encouraged. The Repository EIS will factor plans for increased usage at the NTS into the analysis of cumulative

effects. For example, the combined effects of transporting various radioactive materials to both the repository and to the NTS will be considered in the analyses of cumulative impacts in the Repository EIS.

The *Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Environmental Impact Statement*, DOE/EIS-203-F, analyzed the potential environmental consequences of managing DOE's inventory of SNF over the next 40 years (DOE 1995a). The Record of Decision states that SNF will be managed by fuel type at three DOE sites: the Hanford Site, the Idaho National Engineering Laboratory and the Savannah River Site. The Repository EIS will evaluate both the transportation to and the emplacement of this SNF in the geologic repository at Yucca Mountain.

The Record of Decision for the *Final Environmental Impact Statement on a Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel*, DOE/EIS-0218F, states that aluminum-based and TRIGA (Training, Research, Isotope, General Atomics) foreign research reactor SNF and target material containing uranium enriched in the United States will be accepted into this country to support the United States' nuclear weapons nonproliferation policy (FR 1996a). The aluminum-based SNF and the target material will be processed at the Savannah River Site for ultimate geologic disposal. The TRIGA SNF will be stored at the Idaho National Engineering Laboratory prior to ultimate geologic disposal. The potential shipment of this foreign research reactor SNF from both the Savannah River Site and the Idaho National Engineering Laboratory to the Yucca Mountain site for ultimate disposal will be evaluated in the Repository EIS.

The *Department of the Navy Final Environmental Impact Statement for a Container System for the Management of Naval Spent Nuclear Fuel*, evaluates alternatives that would provide a system of containers for managing Naval SNF following examination at the Idaho National Engineering Laboratory, prior to potential shipment to Yucca Mountain (U.S. Navy 1996). The Navy has estimated between 300 to 500 container shipments to the proposed repository would occur between the years 2010 and 2035 depending on the alternative selected. The addition of special case waste would increase the number of containers under any alternative by about 15 to 20 percent. The potential shipment of this SNF to Yucca Mountain will be included in the analysis of transportation impacts in the Repository EIS.

The *Draft Waste Management Programmatic EIS*, DOE/EIS-0200-D, is a nationwide study that analyzed the environmental impacts of managing five types of radioactive and hazardous waste, including HLW, from nuclear weapons production and related activities (DOE 1995b). The NTS was identified as a potential site for the disposal of low-level waste and low-level mixed waste; and for the treatment and storage of transuranic waste. The Waste Management Programmatic EIS also evaluated the storage of HLW prior to its potential shipment to Yucca Mountain. If the NTS were chosen as a disposal site for low-level waste and low-level mixed waste and for the storage of transuranic waste, the transportation of these wastes to the NTS will be considered in the analysis of cumulative impacts in the Repository EIS. The

shipment of HLW from DOE storage sites for disposal at Yucca Mountain will also be evaluated in the Repository EIS.

The *Tank Waste Remediation System, Hanford Site, Richland, Washington, Final Environmental Impact Statement*, DOE/EIS-0189, August 1996, was jointly prepared by DOE and the Washington State Department of Ecology (DOE 1996b). This EIS evaluated alternatives to manage and dispose of Hanford Site tank waste and encapsulated cesium and strontium. For purposes of analysis, the Tank Waste EIS assumed that up to 7,100 HLW canisters (1,800 Hanford multi-purpose canisters) of material would satisfy the potential repository's acceptance criteria and could be placed in a geologic repository at Yucca Mountain. Any decisions on management of cesium and strontium capsules have been deferred.

The *Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement*, DOE/EIS-0229, analyzed the potential consequences of alternatives for the long-term storage (up to 50 years) and disposition of weapons-usable fissile materials from U. S. weapon dismantlements under the responsibility of DOE (DOE 1996c). This EIS evaluated technologies for long-term storage at six DOE candidate sites including the NTS, as well as three alternatives for reactor immobilization that would produce waste forms suitable for disposal at Yucca Mountain. The Record of Decision determined that a combination of immobilization, using vitrification or ceramic techniques, and conversion to a mixed oxide fuel for use in existing light water reactors would be appropriate (FR 1997).

The Yucca Mountain site lies partly on the Nellis Air Force Range Complex. The U.S. Air Force is preparing the *Air Force Range Legislative Environmental Impact Statement* to assess the potential environmental impacts of renewal of the Nellis Air Force Range, which includes more than 3 million acres of land in Clark, Nye, and Lincoln counties in Nevada, all in the vicinity of Yucca Mountain (FR 1996b). The current withdrawal for the range expires on November 6, 2001. Alternatives to be evaluated in the legislative EIS include renewal of the land withdrawal indefinitely, with Congressional review every 15 years; renewal of the land withdrawal for 25 years; and the No Action alternative, which would result in no renewal of the land withdrawal. The proposed actions at the Nellis Air Force Range Complex will be considered in the Repository EIS in the analysis of cumulative impacts to the environment.

The Department of the Navy is preparing an *Environmental Impact Statement for the Proposed Master Land Withdrawal Naval Air Station Fallon, Nevada*, for the withdrawal of federally-owned lands around Naval Air Station Fallon training ranges in Churchill County, Nevada (FR 1995b). The proposed actions at Naval Air Station Fallon will be considered in the analysis of cumulative impacts to the environment in the Repository EIS.

2. THE SCOPING PROCESS

2.1 DESCRIPTION OF THE SCOPING PROCESS

On August 7, 1995, DOE published a Notice of Intent in the *Federal Register* announcing its intent to prepare an EIS for a repository at Yucca Mountain, Nevada (FR 1995a). DOE notified interested persons, including federal, state, and local government agencies, Native American tribal organizations, public interest groups, transportation interests, industry and utility organizations, regulators, and members of the general public, to participate in the scoping process. In addition, DOE held 15 public scoping meetings across the country between August 29 and October 24, 1995, to allow interested parties to present verbal and written comments. The scoping period officially closed December 5, 1995.

To encourage broad participation by the public, DOE notified stakeholders by mail prior to publication of the Notice of Intent and notified the media. Congressional representatives with jurisdiction over nuclear waste issues, Nevada's Congressional delegation, the Office of the Governor of Nevada, the affected units of local government, and affected Indian tribes were notified in advance of publication of the Notice of Intent. A series of information releases were mailed to stakeholders and members of the general public notifying them of the opportunity to comment. Press releases and public service announcements were submitted to selected newspapers, television stations, and radio stations. DOE representatives met with local television, radio, and newspaper reporters at each scoping location prior to each scoping meeting to provide information about the repository program, the EIS, and the scoping process. Information about the repository program was inserted into utility bills, and informational flyers and fact sheets were distributed widely at each scoping location and by request.

Specific techniques were employed to meet environmental justice goals for the Repository EIS. These included assessing each of the 15 cities where public scoping meetings were held to determine if any one ethnic group comprised at least 10 percent of the total population. If this was the case, then news publications and/or radio stations that specifically targeted these populations were contacted to notify them of the scoping meetings. Translators were offered upon request.

2.1.1 Pre-Scoping Briefings

Oversight and stakeholder groups were briefed prior to publication of the Notice of Intent. These groups included the Nuclear Regulatory Commission, the Nuclear Waste Technical Review Board, Native American tribal organizations, and the ten affected units of local government. The proposed action and alternatives, the proposed schedule of scoping meetings, and the means by which DOE intended to solicit public comment were discussed.

2.1.2 Public Meetings

Publication of the Notice of Intent on August 7, 1995, marked the beginning of the formal public scoping period for the EIS. Of the 15 public scoping meetings, five were conducted in Nevada. One scoping meeting with two sessions was held at each location: either a morning or afternoon session and an evening session to provide wide opportunities for public involvement.

At the beginning of each session a facilitator explained the scoping meeting format. This was followed by DOE describing the repository program, the EIS, and the scoping process. The public was encouraged to ask questions and discuss particularly important aspects of the repository program with DOE and technical staff. At the end of the question and answer period, the formal public comment portion of the scoping meeting began and the facilitator invited members of the public to comment on the scope of the EIS. Court reporters typed verbatim transcripts of the proceedings. Blank comment cards were available for those members of the public who preferred to provide written comments. A separate information room, containing exhibits and handouts about the repository program and the EIS, was set up at each public scoping meeting. Technical representatives were present to answer questions. In addition to the formal meetings, scoping comments could also be submitted to the DOE through toll-free phone calls, faxes, and conventional and electronic mail. Moreover, information about the repository program, the EIS, and the scoping process was available to the public on the Internet and in designated public reading rooms around the country.

In addition to the 15 public scoping meetings, DOE representatives also met with 13 Native American tribes to describe the EIS scoping process and encourage tribal involvement in the process. Seven hundred eighty-five (785) people attended the 15 scoping meetings, of which 242 participants provided verbal comments. Five hundred sixty-eight (568) people submitted comments during the public comment period. Table 2-1 lists the meeting locations, dates, attendance and number of commentors. Table 2-2 lists the 21 categories of issues identified during scoping and the number of people who commented.

2.2 RESULTS OF THE SCOPING PROCESS

The EIS will evaluate the site-specific environmental impacts from construction, operation, and closure of a repository for SNF and HLW disposal at Yucca Mountain, Nevada. Other wastes that require permanent isolation and are compatible for storage in a repository environment are being considered for possible evaluation in the EIS based on public scoping comments. The transportation-related impacts of the options included in the EIS will also be evaluated and a preferred regional rail corridor will be determined. The EIS will also include evaluation of:

- radiological and non-radiological releases to the environment
- occupational and public impacts

Table 2-1. Meeting Locations and Attendance

Meeting Locations	Date	Total Attendance	Number of Verbal Commentors
Pahrump, NV	August 29, 1995	42	10
Boise, ID	September 6, 1995	35	7
Reno, NV	September 8, 1995	134	40
Chicago, IL	September 12, 1995	19	8
Las Vegas, NV	September 15, 1995	221	38
Denver, CO	September 19, 1995	50	10
Sacramento, CA	September 21, 1995	32	12
Dallas, TX	September 26, 1995	18	13
Caliente, NV	September 28, 1995	27	11
Salt Lake City, UT	October 5, 1995	30	13
Baltimore, MD	October 11, 1995	40	19
Albany, NY	October 13, 1995	34	17
Atlanta, GA	October 17, 1995	30	18
Kansas City, MO	October 20, 1995	23	10
Tonopah, NV	October 24, 1995	50	16
Totals		785	242

Table 2-2. Issue Categories Identified during Scoping for the Repository EIS

Issue Category	Number of Commentors^a
Policy	323
NEPA Process	801
Proposed Action/Alternatives	392
Schedule and Licensing of Repository	5
Land Use	156
Air	7
Geology	51
Hydrology	29
Biology	162
Health and Safety	570
Transportation	1,036
Cultural and Historic Resources	175
Environmental Justice	20
Noise and Aesthetics	4
Performance Assessment	624
Cumulative Impacts	45
Mitigation (Financial Assistance)	280
Program/Project Cost	214
Socioeconomics	66
Accidents	25
General	1,257

a. Comments received from all sources.

-
- accidents, including those with low probability but high consequences
 - criticality
 - waste isolation, a long-term performance assessment to evaluate the ability of the repository to isolate the waste
 - socioeconomic impacts including the effect on employment, tax base, and public services
 - environmental justice
 - pollution prevention
 - impacts to soil, water, and air
 - biological resources and impacts to plants, animals and habitat including threatened and endangered species
 - cultural resources, the impact to archaeological/historical sites and Native American resources, and
 - cumulative impacts from the proposed action and other past, present, and reasonably foreseeable future actions.

The text which follows provides a summary and compilation of issues raised during the public scoping process together with the general approach for resolution. The summarized comments are provided in Appendix A, Tables A.1-1 through A.21.

2.2.1 Policy

2.2.1.1 Policy Subissue (A)

Issue Summary A total of 323 people commented on issues of a policy nature. These issues are summarized in Appendix A, Tables A.1-1 through A.1-5. Specifically, a major group of issues focused on the limited scope of the EIS; many commentors requested the EIS evaluate the need for the repository, alternatives to geologic disposal, and alternative sites to Yucca Mountain. Others requested that the EIS evaluate the disposal of more than 70,000 MTHM of spent fuel, additional types of wastes, and alternatives if the repository cannot accommodate 70,000 MTHM, including a second repository. In contrast, some people believed that DOE should maintain the limited scope, but eliminate the No Action alternative.

General EIS Approach Although the EIS will not evaluate the need for the repository, alternatives to geologic disposal, or alternative sites, the EIS may, for purposes of analysis, evaluate the disposal of more than 70,000 MTHM of SNF and HLW and may include analysis of the disposal of other wastes, as discussed in Section 1.3. These analyses are being considered as a result of public comments provided during the scoping process. The EIS will include a No Action alternative. In response to public comment, DOE is considering evaluating expanded inventory “modules” in the EIS to analyze the disposal of all projected SNF and HLW, as well as other highly radioactive waste types that may require permanent isolation.

2.2.1.2 Policy Subissue (B)

Issue Summary Other commentors requested that the Repository EIS be deferred pending resolution of major programmatic issues including proposed new legislation, environmental release standards, and funding issues. Others questioned the short schedule for completing the EIS, with the stated concern that the results of ecosystem-based studies on the long-term consequences of the repository to future generations may not be available during preparation of the EIS. Others requested that the implementation plan describe where the results of these studies would be made public (for example, in supplemental EISs).

General EIS Approach DOE does not believe that Repository EIS should be deferred. The site recommendation must be accompanied by an EIS, and the Repository EIS will fulfill that mandate. The schedule for completing the Repository EIS by 2000 is based on the complexity and uniqueness of the program and the parallel timing of site characterization activities and license application development. The EIS will reference or summarize the results of available studies that are relevant to the long-term effects of the repository on future generations, and these references or appendices will be available for public review. Where studies have not been completed, the EIS will make assumptions that are founded in scientific evidence for purposes of analyses.

2.2.1.3 Policy Subissue (C)

Issue Summary Some commentors were concerned that Yucca Mountain was selected as the only possible site for a repository. Some cited Nevada's political weakness, and asserted that Congress and not science narrowed three possible sites to only one. Some wanted to know how the DOE planned to acquire control of the site considering that the consent of the Nevada Legislature is required. Others said that each shipment of waste entering Nevada should be taxed.

General EIS Approach In 1987, Congress directed the DOE to "provide for an orderly phase-out of site specific activities at all candidate sites other than the Yucca Mountain site" (NWPA). If Yucca Mountain is recommended by the Secretary of Energy and then by the President for development as a repository, the Governor and the legislature of the State of Nevada could notify Congress if they disapprove the site. This action would end the repository program in Nevada unless Congress enacts legislation to approve the site over the objections of the State of Nevada.

The Nuclear Regulatory Commission regulations require DOE to demonstrate that the land on which the geologic repository operations area and the controlled area would be located be either acquired and under DOE's control or be permanently withdrawn and reserved for DOE's use. Under Nuclear Regulatory Commission regulations, these lands would need to be free and clear of all encumbrances, such as those arising under general mining laws, easements for rights-of-way, leases, deeds, patents, and mortgages. These regulations and institutional controls will be discussed in the EIS. There are no provisions in the NWPA for Nevada, or counties in Nevada, to tax waste shipments entering the State.

2.2.1.4 Policy Subissue(D)

Issue Summary Commentors questioned if and under what conditions the DOE would recommend that Yucca Mountain is unsuitable for a repository. Some commentors questioned what DOE's plan would be if the site were found to be unsuitable. Others believed that the site would never be found unsuitable because of the large amount of money already spent, and they stated that the siting guidelines are revised when technical problems arise.

Some commentors wanted to know how the DOE planned to increase public confidence in the program's scientific basis and in DOE's management of the program. A few said the waste should be retrievable far beyond the 100 years planned by DOE, because the waste may become valuable in the future and because future technological advances may be able to neutralize the waste. Others were concerned that the accumulation of waste in one place, and waste transport, could offer opportunities for terrorism and weapons proliferation.

General EIS Approach DOE's site characterization and related work at Yucca Mountain has been, and continues to be, subjected to the scrutiny of Congress, the National Academy of Sciences, the Nuclear Waste Technical Review Board, the Environmental Protection Agency, the Nuclear Regulatory Commission, the State of Nevada, affected counties, and Native American Indian tribes. This scrutiny has helped to ensure the technical adequacy and credibility of DOE's evaluation, and to enhance public confidence in the scientific basis and management of the program. The EIS will evaluate waste retrievability for up to 100 years from start of emplacement (prior to repository closure) consistent with Nuclear Regulatory Commission regulations. The long-term performance assessment evaluates environmental impacts out to 10,000 years or to the time of peak dose if peak dose occurs at a later time. The potential for terrorism and weapons proliferation will be discussed in the EIS. The EIS will either discuss or reference: the Safety Analysis Report, as appropriate; the safeguard and security measures to be employed during waste transport and disposal; and for closure, prevention of the unauthorized removal of waste from the repository.

The NWPA directs DOE to evaluate the suitability of the Yucca Mountain site as a potential site for a geologic repository. If the Secretary of Energy determines that the site is suitable, the Secretary may then recommend that the President approve the site for development of a repository. Under the NWPA, any such recommendation shall be considered a major Federal action and must be accompanied by a final EIS. Accordingly, DOE is preparing the Repository EIS in conjunction with any potential DOE recommendation regarding the development of a repository at Yucca Mountain. The Repository EIS will analyze the potential environmental impacts of the construction, operation, and eventual closure of a repository at Yucca Mountain.

2.2.1.5 Policy Subissue (E)

Issue Summary Some commentors said the EIS should address construction of the exploratory tunnel and related facilities as a *de facto* repository. Commentors also said that baseline conditions should be those that existed prior to the start of site characterization. Another issue

was the safety of the repository considering that existing and proposed radiation-release standards allow for some radiation to escape from the repository.

General EIS Approach The NWPA authorized DOE to engage in appropriate site characterization activities to learn as much as possible about the site. The exploratory tunnel and related facilities are part of this site characterization program. The proposed action is to construct, operate, and close a repository. The purpose of the EIS is to assess the environmental consequences of this action on the affected environment. Thus for purposes of the EIS, the affected environment or “baseline conditions” will be those that exist, or are anticipated to exist, at the time the Draft EIS is issued for public comment.

The DOE is required to demonstrate compliance with the Environmental Protection Agency standards (yet to be finalized) for the Yucca Mountain project in its licensing application to the Nuclear Regulatory Commission. The EIS will analyze the long-term environmental impact, if any, from waste disposal.

2.2.1.6 Policy Subissue (F)

Issue Summary Other policy comments were related to transportation, uncertainty in predicting long-term performance, the relationship of the Repository EIS to other DOE or other agency EISs currently in preparation, and the liability and responsibility of potential accidents at the repository. Specifically, these commentors were concerned about: (1) how the transportation analysis would be done and what the scope of this analysis would be (e.g., would it be conducted on a mile-by-mile basis and include emergency-response measures); (2) how to predict future events and have confidence in assumptions that are made; (3) the relationship between the Repository EIS, the U. S. Navy Multi-Purpose Container System EIS, and the NTS EIS; and (4) what agencies are liable in the event of an accident involving nuclear waste.

General EIS Approach Section 2.2.11 of this document discusses the scope of the transportation analysis which will analyze representative transportation corridors; however, the impacts will not be discussed on a mile-by-mile basis. Emergency response and safeguards and security during transportation will also be discussed. The long-term performance assessment that will be conducted for the Repository EIS is discussed in Section 2.2.15 of this document. As noted previously, the performance assessment will identify events and processes that bound the potential environmental impacts from emplacing SNF and HLW. The relationship between the Repository EIS and other DOE and non-DOE EISs, including the two mentioned above, is discussed in Section 1.4 of this document. As noted in Section 2.2.19 of this document, the Repository EIS will discuss organizations having financial responsibilities for emergency response and preparedness as well as responsibilities to remediate accidents from either transportation or repository operations.

2.2.2 NEPA Process

Issue Summary Eight hundred and one (801) people commented on issues related to NEPA requirements and procedures. These issues are summarized in Appendix A, Table A.2.

Specifically, the comments related to maximizing participation in the public scoping process, preparing the Implementation Plan, conducting consultations as required by the NEPA process, the content of the Record of Decision, and performing the impact analysis. Some commentors wanted meetings and hearings to be held in their particular communities, especially if SNF or HLW would be transported through their community. Other commentors stated that insufficient notice and inadequate information were provided relative to the public scoping meetings. Others requested that either the meeting format or the scoping process be modified to encourage broader public participation, provided suggestions for the content of the Implementation Plan and the Record of Decision, and made suggestions and recommendations regarding consultations to be conducted as part of the NEPA process. Other commentors made general recommendations about conducting the impact analysis for the EIS.

General EIS Approach Section 2.1 of this document describes the scoping process for the EIS and the DOE efforts to provide opportunities for public involvement in the process. The location of meetings and hearings during the public comment period for the Draft EIS has not been selected. As discussed in Section 1.1, although an Implementation Plan will not be prepared for the Repository EIS, this comment summary document was prepared to summarize the issues identified during the scoping period for the EIS and to discuss the general approach for how these issues will be addressed in the EIS. Analyses that are planned for specific issues identified during scoping are discussed in this section.

2.2.3 Proposed Action and Alternatives

Issue Summary Three hundred and ninety-two (392) people commented on issues related to the proposed action and alternatives to be evaluated in the EIS. These issues are summarized in Appendix A, Table A.3. Specifically, the comments related to expanding the scope of the EIS to include analysis of: disposal of all projected SNF and HLW, as well as other highly radioactive wastes; evaluation of alternatives to geologic disposal; additional options for transportation routing and modes and packaging; alternatives for implementing each phase of the repository (construction, operation, and closure); and additional thermal management strategies. Issues related to the evaluation of the No Action alternative included comments that the evaluation should include impacts at waste generator sites in the event that a repository at the Yucca Mountain site would not be constructed. Other issues focused on the EIS providing a thorough and equivalent level of discussion for all alternatives and all wastes and waste characteristics.

General EIS Approach The EIS will evaluate a proposed action to construct, operate, and eventually close a repository at Yucca Mountain for the geologic disposal of 63,000 MTHM of commercial SNF and 7,000 MTHM of DOE SNF and HLW. Four alternatives will be evaluated; three implementing alternatives for the proposed action and a No Action alternative. The implementing alternatives will be based on thermal load objectives; namely, a high thermal load that considers the emplacement of greater than 80 MTHM per acre, an intermediate thermal load of between 40 and 80 MTHM per acre, and a low thermal load of less than 40 MTHM per acre. Based on the comments received, DOE is considering presenting incremental analyses of the disposal of all projected SNF and HLW, as well as other highly radioactive waste types that may

require permanent isolation.

As part of each implementing alternative, two packaging options will be evaluated. Under Option 1, SNF assemblies would be packaged and sealed in multi-purpose canisters at the generator sites prior to being transported in casks to the repository. HLW would be packaged and sealed in canisters prior to shipment in similar casks. Under Option 2, SNF assemblies (without canisters) and sealed canisters of HLW would be transported to the repository.

Each implementing alternative will also evaluate five transportation options, two national and three regional (i.e., within the state of Nevada). For the national transportation, the first option would consist of shipping all SNF and HLW by truck, from the generator site to the repository. The second national option would consist of shipment by rail, except from those generator sites that do not have existing capabilities to load and ship rail casks. For the regional transportation, there are three options; two apply to shipments that would arrive in Nevada by rail, and the third applies to shipments that would arrive by truck. The first regional transportation option would evaluate several rail corridors to the repository, leading to the selection of one preferred rail corridor. The second regional transportation option would involve the use of heavy haul truck routes to the repository, including the construction and operation of an intermodal transfer facility to receive shipments that would arrive by rail. The third regional transportation option would involve legal weight truck shipments from the generator sites directly to the repository.

Under the No Action alternative, a geologic repository at the Yucca Mountain site would not be operated. SNF and HLW would continue to accumulate at the 75 commercial nuclear reactor sites and at DOE facilities. Any existing equipment and facilities at the Yucca Mountain site (for example, the exploratory studies facility and support facilities) could be reclaimed, dismantled and removed for reuse, recycling, or disposal as appropriate.

The No Action alternative will be analyzed by evaluating a generic commercial nuclear reactor site and continued storage at DOE facilities using the following assumptions. Storage containers at commercial sites would be routinely monitored for corrosion and repackaged as necessary to comply with safety requirements. The DOE-owned SNF would continue to be stored at the Hanford Site, the Idaho National Engineering Laboratory, and the Savannah River Site. The commercial site and DOE facilities would continue to be operated for a period of 100 years to ensure public health and safety, after 100 years institutional control is assumed to be lost.

2.2.4 Schedule and Licensing of Repository

Issue Summary Five commentors asked about the schedule for, and licensing of, the repository. These comments are summarized in Appendix A, Table A.4. The comments focused on DOE's responsibility to begin accepting waste shipments in 1998, the schedule for submitting a license application to the Nuclear Regulatory Commission, and whether this schedule is the driver for DOE starting scoping hearings in 1995. Another comment related to why so many years are required between scoping and licensing.

General EIS Approach The legislative history of the repository program and DOE's efforts to meet Congressionally-mandated and other requirements of the program will be discussed in the background section of the EIS. This section will also discuss legislative mandates that have evolved over the past 14 years, as well as regulatory drivers that apply to the repository program. In 1996, the U.S. Court of Appeals for the District of Columbia [*Indiana Michigan Power Company, et al. vs. Department of Energy and United States of America, et al.*, 88 F.3d 1272 (D.C. Cir. 1996)] ruled, in response to a petition filed by various utilities, public utility commissions, and states attorneys general, that DOE is obligated to start disposing of SNF from standard contract holders no later than January 31, 1998, under the terms of the NWPA. However, the Court also found that since that date has not yet arrived, it is premature to determine an appropriate remedy because no violation of the NWPA or Standard Contract terms has yet occurred. The NEPA process for the Repository EIS (i.e., from publication of the Notice of Intent to preparation of a Record of Decision) is scheduled to take about five years to ensure that appropriate data gathering and tests are performed to adequately assess potential environmental impacts, and to allow the public sufficient time to consider this complex Program and provide input. The preparation of a license application will parallel the preparation of the Repository EIS and rely on much of the same technical information. The license application is currently scheduled to be submitted to the Nuclear Regulatory Commission in 2002. Based on comments received regarding DOE's responsibility to begin accepting waste by 1998, DOE is considering incremental analysis for receipt of waste at Yucca Mountain prior to full operation of the repository.

2.2.5 Land Use

Issue Summary One hundred and fifty-six (156) people commented on land use. These comments are summarized in Appendix A, Table A.5. The issues focused on the effects of constructing and operating the repository and related facilities (such as a rail line, heavy-haul roads, and transfer stations) and on the use and management of land. Commentors were concerned about consistency with existing land use plans, about the use of rights-of-way and eminent domain for repository components, and about potential impacts on recreational uses and grazing. Other issues dealt with coordinating regional councils, cleanup standards, public access across transportation corridors in Nevada, and potential conflicts with U.S. Air Force operations on the adjacent Nellis Air Force Range Complex. Ecosystem management at Yucca Mountain and consistency with the DOE's Land Facility Use Management Policy and the Resource Management Plan for the NTS, were also concerns.

General EIS Approach Land ownership and major land use in the region of influence for Yucca Mountain will be discussed in the EIS. The land ownership and land use along regional transportation routes and other Nevada-based repository facilities will also be discussed. Impacts to land resources in the region of influence from construction and operation of the repository will be examined in the EIS. This will include analysis of land withdrawal and potential impacts on the NTS and at the Nellis Air Force Range Complex, to public and private lands, and to State and other Federal lands. Land-use impacts from potential land acquisition and construction and operation of new rail-lines, heavy-haul roads, and transfer facilities in Nevada will also be

evaluated. The total acreage to be disturbed for each major component of the repository (surface and subsurface facilities, rail line, new roads, etc.) and during each phase of the program (construction, operation, and closure) will be discussed. The impacts of co-located Yucca Mountain and NTS operations will be evaluated in the analysis of cumulative effects.

2.2.6 Air Quality and Meteorology

Issue Summary Seven people commented on air quality and meteorology. These comments are summarized in Appendix A, Table A.6. Comments focused on how constructing and operating the repository and related facilities (rail line, heavy-haul roads, and waste-transfer facilities) could degrade air-quality, affect health from exposure to airborne radiation, and impair visibility which could reduce the safety of waste transport.

General EIS Approach Existing air quality in potentially affected air basins in Nevada will be characterized in the EIS. Class-I air-quality areas within the Yucca Mountain region of influence and other potentially affected areas, if any, in Nevada will be identified. Meteorological conditions such as severity and type of storms, temperature extremes, and precipitation will be described.

Potential impacts to air quality from routine air emissions to the atmosphere during each phase of the repository program will be estimated for potentially affected air basins in Nevada. The air emissions from the repository and related facilities in Nevada will be compared to State and Federal ambient air-quality standards and health effects will be estimated. Cumulative impacts to air quality will consider existing and anticipated future actions at Yucca Mountain, the Nellis Air Force Range Complex, the NTS, and other sources of air pollutants, such as nearby mining operations and nearby cities.

2.2.7 Geology

Issue Summary Fifty-one (51) people commented on geology. These comments are summarized in Appendix A, Table A.7. Comments focused on predicting earthquakes and the effects from earthquakes, and predicting the effect of volcanism on repository operations and long-term transport of radionuclides. The validity of geologic mapping including identifying faults and joints and the effect on the rock of underground weapons-testing at the NTS were also issues. The transport of radioactive and hazardous materials that could spill and potentially migrate into the subsurface rock at Yucca Mountain were also concerns. Other comments related to identifying paleontologic sites that could potentially be impacted by the proposed actions, to assessing the mineral-resource potential of areas withdrawn for the repository, and to indicating whether DOE would monitor and numerically model surface subsidence caused by underground excavations.

General EIS Approach The geologic conditions that could affect long-term containment of disposed radioactive material will be described in the EIS including seismicity, geologic structure, and the volcanism of the region. The results of seismic hazard analyses and the

seismic design of the facility will also be discussed. Any paleontologic sites that could be affected by construction and operation of the repository will be described and the mineral-resource potential of areas that may be withdrawn will be assessed. The groundwater quality will be discussed and data will be reviewed to determine if there are effects from past weapons-testing on the NTS or from spills and from the intentional injection of tracers during characterization of the Yucca Mountain site. Data collected to support site characterization activities (i.e., information on rock properties) will be analyzed to assess the likelihood and potential consequences of subsidence. Attributes related to geology, such as topography, soil erodability, landslide potential, and faults and subsidence zones are being included in the criteria to be used for the selection and evaluation of rail alignment and heavy haul routes. The geologic setting along rail and truck routes in Nevada and throughout the nation will not be described in detail.

The effect of uncertain long-term geologic events will also be discussed in the EIS. The potential effects on the rock at Yucca Mountain from past testing of nuclear weapons at the NTS will be discussed in the EIS using the best available data. The economic impacts, if any, of precluding development of mineral resources in areas that may be withdrawn will be discussed in the EIS as described in Section 2.2.5. The EIS will address compliance with all regulatory requirements.

2.2.8 Hydrology

Issue Summary Twenty-nine (29) people commented on hydrology. These comments are summarized in Appendix A, Table A.8. The comments focused on the regional impacts of the repository and for waste transport relative to the quality and quantity of surface water and groundwater; how the effects on surface water and groundwater would be analyzed; and that additional characterization of the deep aquifer system was required to determine the potential effect on groundwater quality in areas such as Amargosa Valley, Ash Meadows, and Death Valley National Park. Some commentators were concerned with the nature and extent of contamination, groundwater monitoring, the possibility of long-term changes in the elevation of the groundwater table, flooding, and the potential for a nuclear criticality. Other commentators were concerned about DOE being in compliance with Nevada water-rights regulations.

General EIS Approach The hydrologic characteristics of the Alkali Flat-Furnace Creek Ranch groundwater basin, where Yucca Mountain is located, will be described in the EIS. The mechanics of flow and water quality in the saturated and unsaturated zones at Yucca Mountain and in areas such as Amargosa Valley, Ash Meadows, and Death Valley National Park will also be described.

Groundwater monitoring has been ongoing for the last eight years and will continue to be conducted at the site. The EIS will discuss the need for and the extent of a pre-closure groundwater-monitoring network. The need for a post-closure monitoring network would be based in part on the results of pre-closure monitoring. As a result, the need for and details of a post-closure groundwater-monitoring network will not be included in the EIS.

The EIS will describe the possible environmental impacts from water in the repository environment. Potential mechanisms include percolation of surface water downward through the unsaturated zone along fractures and through the rock matrix, and from a potential rise in the elevation of the water table from regional and global climate changes over thousands of years. (The underground repository would be constructed in unsaturated rock about 700 feet above the water table.) The EIS qualitatively describe (1) the effects of reasonably feasible future climatic extremes on the flow of groundwater and the elevation of the water table in the vicinity of Yucca Mountain, (2) the likely cause and meaning of the elevated concentrations of tritium found in the unsaturated zone at Yucca Mountain, and (3) the likelihood of deep-seated hot water invading the repository.

The EIS will also qualitatively describe the potential impacts on water quality and water flow at springs and wells in the Alkali Flat-Furnace Creek Ranch groundwater basin.

2.2.9 Biology

Issue Summary One hundred sixty-two (162) people commented on issues related to biology. These comments are summarized in Appendix A, Table A.9. The concerns focused on impacts to critical habitat for threatened, endangered, and sensitive species and other biologic resources from implementing the repository program. Specific issues included concerns about potential changes in the surface ecosystem at Yucca Mountain from waste-generated heat and impacts to wildlife and their habitat from both repository construction and operation and from transporting waste. Other commentors were concerned about the effects on wilderness and public recreation areas from construction and operation of national and regional waste-transportation corridors and the potential loss of revenue from the loss in big-game habitat.

General EIS Approach The EIS will describe biological resources within affected areas in Nevada including threatened, endangered, and sensitive species (i.e., species of concern to the State of Nevada) and game species. Potentially affected areas include Yucca Mountain and portions of the Alkali Flat-Furnace Creek Ranch groundwater basin, potential waste-transfer sites in Nevada, and waste-transport corridors in Nevada.

The EIS will evaluate impacts to wildlife and wilderness and public recreation areas at and near Yucca Mountain from construction and operation of the repository based on currently available information. Post-closure effects to wildlife from a potential increase in heat at the surface by implementing the various alternatives will also be evaluated. Attributes related to biology, such as terrestrial habitats, floodplain and wetland communities, protected areas, federal and state threatened and endangered species, and other special status species will be included in the criteria to be used for the selection of rail alignments and heavy haul routes. Potential for loss of game habitat will be assessed.

2.2.10 Health And Safety

Issue Summary Five hundred seventy (570) people commented on issues related to health and safety. These comments are summarized in Appendix A, Table A.10. Specific concerns included requests for baseline health assessments of potentially affected areas, concerns about past radiation exposure, radiological impacts during operations and after closure, exposure pathways and scenarios that would be evaluated, and the effects of radiation on Native Americans and agriculture from human error and nuclear arms proliferation.

General EIS Approach The Repository EIS will characterize the baseline affected environment using the best available data. Past radiation exposures from activities at the NTS (e.g., from atmospheric testing) will be considered in the cumulative impacts section of the EIS using existing published studies. The radiological impacts to workers and the public including Native Americans will be analyzed in the EIS, for both the pre-closure time period, which includes transportation, and the post-closure time period. Potential worker doses will be evaluated assuming both normal operations and accident conditions. Radiological impacts to the public during all phases of repository activity (construction, operation, closure, and post-closure) will be assessed.

2.2.11 Transportation

2.2.11.1 Transportation Subissue (A)

Issue Summary One thousand thirty-six (1,036) people commented on issues related to transportation. These comments are summarized in Appendix A, Tables A.11-1 through A.11-7. Issues raised by commentors included transportation routing, transportation accidents, human health impacts related to transportation, transportation emergency response, transportation shipping containers, pre-notification, liability after transportation accidents, sabotage or terrorist attacks, and the economic impacts of transportation accidents.

General EIS Approach The Repository EIS will analyze the radiological and nonradiological impacts of shipping radioactive material to the repository. The impact analyses will include the impacts from both normal operations and accidents. The impacts from transporting radioactive material will include the risks to populations surrounding and sharing the transportation routes, to transportation workers, and to populations and the maximally exposed individual as a result of transportation accidents. The transportation accident analyses will include the risks from low probability/high consequence accidents and the risks from high probability/low consequence accidents. The EIS will include a detailed discussion of the transportation risk assessment methods and models, and the data used in the transportation analyses will also be presented. For example, shipment numbers and shipping container capacities and inventories will be presented.

Transportation issues such as pre-notification, emergency response, liability, transportation regulations (e.g., U.S. Department of Transportation and Nuclear Regulatory Commission regulations) and orders (e.g., DOE Orders), and safeguards and security issues will be discussed in the EIS. Sabotage or terrorist attacks will also be discussed.

The Repository EIS transportation analyses will include both truck and rail transport. The highway transportation analyses will be based on Department of Transportation routing regulations for the transport of radioactive materials. These regulations will be discussed in the EIS. The transportation analyses will use representative transportation routes and actual route characteristics, such as distances, population statistics, and state-level accident rates.

2.2.11.2 Transportation Subissue (B)

Issue Summary Commentors also offered criteria for the evaluation and selection of the rail alignments and heavy haul routes within Nevada. These criteria included attributes such as cost, land use, engineering feasibility, environmental impacts, transportation safety and risk, potential for shared use, availability of data, conflicts with U.S. Air Force operations, and cultural resources.

General EIS Approach Many of the criteria offered by commentors have been incorporated into the selection and evaluation criteria. For example, criteria related to environmental impacts, such as the impacts to water resources, land forms and geology, air quality and biological resources have been incorporated. The detailed criteria used to evaluate and select the rail alignments and heavy haul routes will be presented in the EIS.

2.2.12 Cultural And Historic Resources

Issue Summary One hundred seventy-five (175) people commented on issues related to cultural resources and Native American concerns. These comments are summarized in Appendix A, Tables A.12-1 and A.12-2. Commentors requested that the EIS include the results of detailed cultural-resource surveys at Yucca Mountain and along transportation routes and that the EIS evaluate historical and prehistorical sites, as well as paleontological resources. Other commentors were concerned about the effect of the Repository program on Native American cultures. People also requested that the Repository EIS fulfill commitments made in the 1986 Environmental Assessment of Yucca Mountain; that the Repository EIS be used as a forum for government-to-government relations; and that the Repository EIS acknowledge the differences between Western civilization and Native Americans with regard to nature. Among the specific comments received included the request to describe Native American land claims in Nevada, treaty obligations, federal laws relating to cultural and religious rights of Native Americans, unsettled political and legal issues, and the application of Indian law to the repository.

General EIS Approach Prior to any planned construction at Yucca Mountain, or within transportation corridors, the DOE would conduct surveys for cultural and historic resources and report the findings to the Nevada State Historic Preservation Officer and the Advisory Council on Historic Preservation. The results of available surveys, as well as studies of resources, will be discussed in the EIS.

The Yucca Mountain Project has maintained a Native American Interaction Program since the late 1980s. This interaction program involves Official Tribal Contact Representatives appointed from 17 tribes and organizations from Nevada, California, Arizona, and Utah. These

Western Shoshone, Southern Paiute, and Owens Valley Paiute and Shoshone people have provided important cultural resource protection information to the project. These interactions will be documented in the EIS.

The DOE recognizes that Native American land claims in Nevada have been an issue of much concern among Native American groups, especially the Western Shoshone. The DOE, however, must abide by recent rulings by the U.S. Supreme Court concerning control of land in much of southeastern Nevada, including the Yucca Mountain area. Applicable land claims issues, treaties, and Federal requirements concerning Native Americans and cultural and religious rights will be discussed in the EIS.

2.2.13 Environmental Justice

Issue Summary Twenty people (20) commented on environmental justice issues. These comments are summarized in Appendix A, Table A.13. Several commentors noted that the EIS must perform an environmental justice analysis consistent with federal directives and comply with federal statutes regarding environmental justice. Commentors stated the analysis should include consideration of disproportionate effects on certain communities, including poor, rural, people of color, any other subgroup of the U.S. population, and any Native American group. Commentors also indicated the EIS also should acknowledge that the Yucca Mountain site and NTS is Western Shoshone land, in consideration of the reserved right of the Western Shoshone Indian Nation.

Most of the 20 commentors indicated that the EIS should fully assess equity concerns by evaluating potential disproportionate impacts on each affected economic, ethnic or racial group along transportation routes. They requested that the assessment should consider emergency response and preparedness capabilities, and the need for training and education of each affected group.

In addition, commentors requested that the EIS consider previous disproportionate impacts citing past and current radioactive and hazardous waste activities at the NTS, and DOE's preferential financial assistance to the affected units of local government, but not certain Indian tribes. The latter was noted by commentors to be in conflict with DOE's Indian policy.

General EIS Approach The EIS will include an evaluation of environmental justice issues as they pertain to the DOE's proposed action of constructing, operating, and closing a repository at Yucca Mountain. Although DOE has not yet developed its detailed analytical approach for environmental justice, the evaluation will be consistent with both the Council on Environmental Quality and DOE guidance for implementing the Environmental Justice Executive Order 12898.

As part of developing the approach for the Repository EIS, in addition to consideration of scoping comments, DOE will also closely review many of the recently completed EISs which address management of SNF, weapons materials and highly radioactive wastes (including the Programmatic Spent Nuclear Fuel Management EIS, the EIS on a Proposed Nuclear Weapons

Nonproliferation Policy Concerning Foreign Research Spent Nuclear Fuel, the Programmatic Waste Management EIS, the Storage and Disposition of Weapons-Usable Fissile Materials Programmatic EIS, the Stockpile Stewardship and Management Programmatic EIS, the Continued Operation of the Pantex Plant and Associated Storage of Nuclear Weapon Components EIS, and the Department of the Navy's final EIS for a Container System for the Management of Naval Spent Nuclear Fuel). Based on this review, and where it makes sense to do so, DOE may use and adapt the approaches and methodologies used for environmental justice analyses by these other EISs. This is consistent with the Council on Environmental Quality regulations which encourage agencies to reduce excessive paperwork in preparation of EISs by incorporating by reference and eliminating repetitive discussions.

DOE acknowledges that there is significant disagreement among the Native American Indian community concerning the Ruby Valley Treaty of 1863 and the lands addressed under that Treaty. DOE must abide by the U.S. Supreme Court rulings. It is not the role or function of the EIS to address or attempt to resolve disputes over such Treaty rights.

Rather, the EIS will evaluate, in accordance with established NEPA precedents, the potential environmental impacts that may be associated with the construction, operation, and eventual closure of a repository at Yucca Mountain. This evaluation of the proposed action will include the potential impacts from transporting spent fuel and HLW along both national and regional transportation routes. The environmental justice evaluation that is developed for the EIS will include consideration of transportation-related effects (also see Section 2.2.11 for additional information regarding transportation analyses). As already mentioned above, DOE will be reviewing many other recently completed EISs for their approaches, methodologies, and scope of analyses. Several of these EISs consider in some detail the potential impacts associated with transportation of spent fuel, weapons materials, and highly radioactive wastes, and also discuss the environmental justice issues that may be raised by potentially extended shipping campaigns involving these materials. DOE also plans to coordinate with the U.S. Department of Transportation to obtain any guidance it may have developed for purposes of implementing the Environmental Justice Executive Order 12898.

2.2.14 Noise And Aesthetics

Issue Summary Four people commented on noise and aesthetics. These comments are summarized in Appendix A, Table A.14. Commentors stated that the EIS should assess baseline and project-induced noise levels along waste-transport routes in Lincoln County and at other County sites where repository facilities and activities would be located (intermodal transfer sites, borrow sites, highway-construction sites, and heavy-haul routes) and that impacts to the quality of life and to wildlife should be evaluated.

General EIS Approach The existing baseline noise environment and visual setting at Yucca Mountain and along transportation routes in Nevada will be characterized in the EIS. The impact on the environment from noise generated at the repository, at the intermodal-transfer facilities, and during construction of transportation routes in Nevada will be assessed. The visual impact of

the repository and of other waste-handling facilities in Nevada, and of operating a rail line in Nevada will also be assessed in the EIS. The analysis for potential impacts to wildlife was described in Section 2.2.9.

2.2.15 Performance Assessment

Issue Summary Six hundred twenty-four (624) commentors were concerned about the performance assessment to be conducted for the geologic repository. These comments are summarized in Appendix A, Table A.15. Eight specific issues were identified that related to: the type of events and processes that should be evaluated in the Repository EIS, the identification of engineered barriers and the ability of waste packages to maintain integrity over thousands of years, the methods used to conduct the performance assessment and evaluate uncertainty, the prediction of human intrusion, the identification of performance measures and institutional controls, the analytical time frame for the performance assessment, and the prediction of potential future impacts.

General EIS Approach. The Repository EIS performance assessment will assess events and processes that bound the potential environmental impacts from emplacing SNF and HLW, including those events and processes having low-probabilities of occurrence, but resulting in high consequences. Total system performance assessments prepared by DOE since 1993 evaluate the ability of the overall system to meet the performance objectives/measures identified in the applicable regulatory standards. These assessments explicitly acknowledge the uncertainty in the process models and parameters and evaluate the impact of this uncertainty on the overall performance.

The proposed engineered features to contain the waste packages will be described in sufficient detail to support the long-term performance assessment. The performance assessment will evaluate degradation of the waste packages given different thermal loads and consider infiltration rates, corrosion models, and other relevant factors. This analysis will consider both manmade and natural materials to retard the movement of radionuclides from the waste packages. Assumptions made for purposes of analysis will be documented in the EIS.

Intruder scenarios to be evaluated in the Repository EIS will be consistent with those required for potential licensing by the Nuclear Regulatory Commission. Non-fatal and fatal latent cancers will be reported in the Repository EIS. The analytical time frame for the Repository EIS will focus on a period of 10,000 years. Analysis will be extended to the time of peak dose and the results used qualitatively. Institutional controls to be implemented will also be described.

2.2.16 Cumulative Impacts

Issue Summary Forty-five (45) people commented on the scope of the analysis for cumulative impacts. These comments are summarized in Appendix A, Table A.16. Specific concerns were that the analysis consider the cumulative radiological risks and hazards from all past, current and

proposed activities involving radiological material not only at Yucca Mountain but at the NTS and other areas where radioactive material has been managed. Commentors were also concerned about the cumulative radiological effects on the human and natural environment from all past, present, and proposed activities involving radioactive material. Other commentors requested that the cumulative impacts section of the EIS address an inventory greater than the 70,000 MTHM limit imposed by the NWSA.

General EIS Approach DOE is considering options to evaluate the disposal of all commercial SNF and HLW, all DOE-owned SNF and HLW, and other wastes that are compatible with a repository environment. The cumulative impact analysis in the Repository EIS will also evaluate the impacts to the environment from past, present, and reasonably foreseeable activities at the NTS, the Beatty low-level waste disposal site, the Nellis Air Force Range, and from the potential shipment of other radioactive materials to the repository as described in Section 1.4. This analysis will include the cumulative impacts to both humans and the natural environment from transporting radioactive material from commercial and DOE sites as discussed in Section 1.4.

2.2.17 Mitigation

Issue Summary. Two hundred eighty (280) people commented on mitigation measures. These comments are included in Appendix A, Table A.17. The primary concern was that the EIS and the resulting Record of Decision and Mitigation Action Plan include and evaluate specific measures to mitigate all impacts, both from routine operations and potential accidents. In addition, commentors indicated that financial compensation should be provided to communities and individuals that could be affected by any phase of repository operations. One commentor indicated that the EIS should more fully consider the options for implementing assistance as required by Section 180(c) of the NWSA.

General EIS Approach The EIS and Record of Decision will discuss measures to mitigate adverse impacts, as necessary. General types of mitigation to be considered include: (1) impact avoidance by, for example, not undertaking certain activities, (2) impact minimization by limiting the degree or extent of certain activities, (3) impact rectification by repairing, rehabilitating, or restoring the affected environment (e.g. surface reclamation), (4) impact reduction or elimination over time, and (5) impact compensation by replacing or providing substitute resources.

Mitigation measures that are included in the Record of Decision will form the basis of DOE's Mitigation Action Plan. Pursuant to DOE regulations, the Mitigation Action Plan will explain how the mitigation measures will be planned and implemented. Following implementation, periodic status reports that address each mitigative measure will be prepared. The Mitigation Action Plan, like the EIS and Record of Decision, will be publicly available.

Section 180(c) of the NWSA requires DOE to provide technical assistance and funds to those States and Indian Tribes in which SNF and HLW will be transported. The assistance and funds are to cover procedures for safe routine transportation, as well as procedures for dealing

with emergency response situations. The EIS will discuss these requirements as well as the status of any relevant planning. However, options for implementing Section 180(c) will not be evaluated in the EIS.

2.2.18 Program/Project Cost

Issue Summary Two hundred fourteen (214) people commented on the cost of the proposed project. These comments are summarized in Appendix A, Table A.18. Specific concerns were related to conducting a total life-cycle cost estimate for each alternative for each phase of repository development (i.e., construction, operation, closure) including transportation. Other comments were concerned about who has financial responsibility for operating the repository and who would have financial responsibility in the event of an accident. Commentors were also concerned about the funding source for the program and requested that the EIS consider funding constraints in the analysis of costs including the analysis of a funding shortfall.

General EIS Approach DOE will consider estimates of the total system life-cycle costs for construction, operation, and closure of the repository as a relevant factor in making a final decision on the proposed action. However, costs will not be addressed in the EIS. The EIS will discuss both Nuclear Waste Fund and DOE funding as they pertain to financial responsibility for development, operation, and closure of the repository. The EIS will also describe organizations having financial responsibilities for emergency response and preparedness as well as responsibilities to remediate accidents from repository operations or transportation.

2.2.19 Socioeconomics

Issue Summary Sixty-six (66) people commented on issues related to socioeconomics. These comments are summarized in Appendix A, Table A.19. The issues focused on what populations should be evaluated and what attributes should be analyzed; the definition of the baseline affected environment; what data should be used as input into the socioeconomic analysis, the appropriate level of analysis and the methodology that would be used to conduct the analysis. Other commentors requested that the EIS discuss mitigation of socioeconomic impacts and that uncertainties, including data and future funding problems that might affect socioeconomic impacts, be described and the impact of these uncertainties be explained.

General EIS Approach The socioeconomic sections of the document will assess the impacts on local and regional socioeconomic conditions considering attributes such as population, employment, economy, housing, and public finance. The EIS will use a baseline consistent with when the Draft EIS is released. Baseline information at the state, county and, where appropriate, local levels will be described including economic fiscal conditions and structure; population distribution; community services; social structure; and culture and lifestyle. Baseline data will be gathered from many sources that could include the State of Nevada, counties and cities in Nevada, and Native American groups.

The EIS will evaluate the socioeconomic impact in Nevada from implementing the repository program for each program phase. Potential socioeconomic impacts will be evaluated in a region of influence defined to assess localized effects around the site in addition to conducting a regional analysis to determine the effects on the economy. The EIS will identify key assumptions of the socioeconomic analyses. If major uncertainties are identified, the sensitivity of the analysis will be discussed.

Possible measures to mitigate socioeconomic impacts may be described in the EIS. Based on public input on the Draft EIS, these measures may be modified for the Final EIS. The Record of Decision will reflect DOE's commitment to certain mitigation measures.

The selection of a rail route in Nevada will consider economic, social, engineering, land use, and environmental factors. The EIS will either describe the criteria and rationale used to select the route.

2.2.20 Accidents

Issue Summary Twenty-five (25) people commented on accidents. These comments are summarized in Appendix A, Table A.20. Specific concerns were the identification of credible accident scenarios including analysis of an accident involving terrorist attacks or sabotage, the potential risk to the public from an accident, identification of evacuation routes, cleanup after an accident, impacts on the tourism business, and compensation for accident victims.

General EIS Approach The Repository EIS will identify a set of credible accident scenarios to evaluate. Accidents that could occur during the transportation phase, the construction and operation of the repository, and the post-closure phase will be assumed. For the post-closure phase, the principal accident initiators that will be considered are natural phenomena (e.g., a design basis earthquake). The suite of accidents to be evaluated will include a low probability, high consequence event to bound the potential environmental impacts. The impacts to the worker, maximally exposed individual, and off-site populations will be assessed. Intruder scenarios to be evaluated during post-closure will be those consistent with Nuclear Regulatory Commission requirements as described in Section 2.2.15.

2.2.21 General

Many commentors provided views and comments that were not related to the scope of the Repository EIS and therefore could not be used to guide the preparation of the EIS. These comments are summarized in Appendix A, Table A.21. While these comments provide a gauge of public sentiment on the program, they were not related to the content of the proposed action. Examples of comments that were placed into this category include: statements both in general opposition to and in general support of Yucca Mountain, repositories, and nuclear power; statements of distrust of the DOE or project opponents; opposition to transporting radioactive material; stated preferences for DOE to select the "No Action" alternative (absent of any environmental analysis); comments directed toward the public criticizing a perceived lack of the

public's willingness to be involved; criticism and support for the NEPA process; comments on unrelated DOE activities; and, criticism of DOE and that decisions had already been made prior to the NEPA process.

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- DOE 1996c. *Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement*, DOE/EIS-0229, December.
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- FR 1996a. 61 FR 25092, "Record of Decision for the Final Environmental Impact Statement on a Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel," U. S. DOE, May 17.
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-

Another F-16 Crashes in West Desert

BY JOHN HEILPRIN and GREG BURTON

THE SALT LAKE TRIBUNE

WENDOVER — For the second day in a row, an Air Force F-16C fighter jet has crashed in Utah's western desert — and the pilot has survived.

The \$20 million jet went down Thursday minutes before 5 p.m. in the Utah Test and Training Range, near the Bonneville Salt Flats. It exploded in a fireball 100 miles west of Hill Air Force Base, Air Force officials said.

Pilot Judd Kelley ejected safely six miles north of Interstate 80 and landed three miles closer to the road.

It took rescuers about an hour to find Kelley, and they were only able to find him in the dark because the pilot set off a flair.

"I'm sure glad to see you guys," Kelley told them upon meeting. Other than feeling a little cold, the pilot with the 388th Fighter Wing's 34th Fighter Squadron said he felt fine.

Wendover Volunteer Fire Chief Wayne Hayes said he heard a page that the plane had been having trouble. He was driving his tractor-trailer on I-80 when he saw the plane fall at a slight angle.

"I automatically started watching the sky, and I kind of glanced at the plane out of the corner of my eye," he said. "Then I saw a

big explosion, like a fireball on the ground. And after that, there was quite a bit of black smoke."

One of the rescuers who first found Kelley, Tooele County Sheriff's Deputy Steve Elton, said of the area where the plane crashed: "There's nothing out there but a big black dark void of mud."

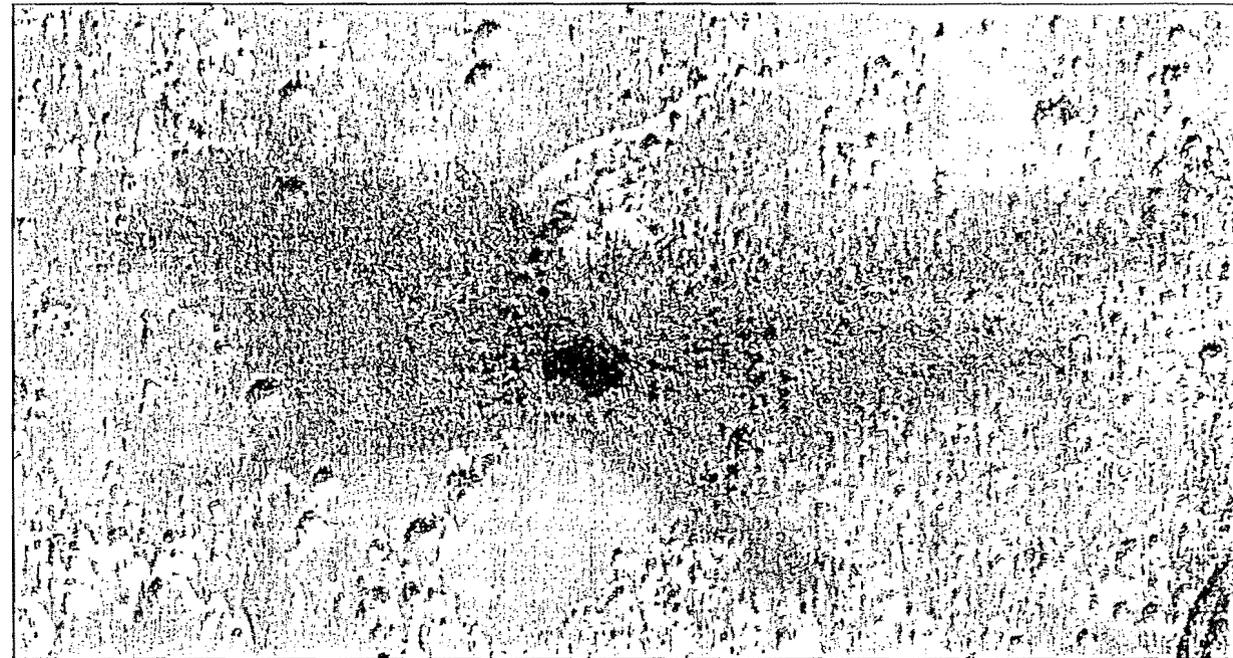
He said a passing motorist saw Kelley parachuting toward the ground.

Kelley ejected near the Silver Island Mountains and was met by rescue personnel from the sheriff's office and fire department. Then a Utah Army National Guard helicopter took him to the base hospital for treatment.

"Initial indications are that he is in good condition," said Frances Kosakowsky, a spokeswoman for the 388th Fighter Wing. "It's a horrible thing to have planes all bugged up, but it's far worse to have a pilot injured."

On Wednesday, two F-16Cs, also from the 388th, collided in midair during a training run. It was the first such midair collision for Hill jets in Utah; pilots Paul Hertzberg and Scott Hufford survived with minor injuries.

In that crash, Hertzberg ejected



Douglas C. Pizac/The Associated Press

Wednesday's F-16 crash created a crater near Wendover. Another F-16 crashed Thursday.

safely while his aircraft crashed and burned. Hufford was able to land his plane at Michael Army Airfield at Dugway Proving Ground.

Ron Fly, commander of the 388th, ordered all flights halted through Friday for an emergency safety review. The wing has 55 of the 70 F-16s at Hill; the 419th

Fighter Wing, which is not affected by the stand-down, has the other 15.

"If you are going to declare a stand-down in flying, that shows a very high level of concern, and it's something we treat very seriously," Hill spokesman Bruce Collins said. "It is a very unusual set of circumstances that these [crashes]

would occur like this."

Kelley was on a simulated bombing run, away from other jets, when "some type of catastrophic failure occurred," said Collins. "He had some type of in-flight emergency, and it's not related to yesterday's accident."

See F-16, Page B-7

F-16 Crash Is Second In Two Days

Continued from B-1

The F-16C is equipped to hold AIM9 Sidewinder missiles for air-to-air combat, but it also can carry other armament.

Kelley's F-16C, which carried 25-pound practice bombs and 510 20 mm practice rounds, was practicing bomb drops on a stationary target.

There have been 11 deaths in Utah related to F-16 accidents, contrary to information on the number of deaths in a *Tribune* story Thursday.

Thursday's crash is the 38th involving F-16s at Hill. There are four types of F-16s: A and C are single-seaters, while B and D are two-seaters. The first operational F-16A was delivered in January 1979 to Hill's 388th.

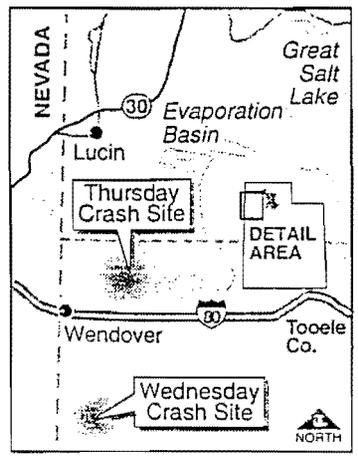
The Air Force has 809 F-16s in use, including those at Hill. Since 1975, there have been 234 major F-16 crashes and 62 deaths in the United States.

Last year, during more than 369,000 collective flying hours, there were 11 major accidents in the U.S. and one death involving the jets.

Just before Thursday's crash, the Tooele County Sheriff's Department dispatch got a call from the military asking permission for an emergency landing at Wendover Airport. Moments later the dispatch received another call

Two Crashes in Two Days

Thursday, a second Air Force F-16C fighter jet crashed in Utah's western desert, this time near Interstate 80. Wednesday, two F-16Cs collided midair, destroying one of the two \$20 million aircrafts. All pilots survived.



The Salt Lake Tribune

saying the plane had to crash land.

At the military's request, the department sent three firefighters and two emergency medical technicians to meet the pilot. They drove about 20 miles and parked on I-80, then walked toward the remaining flames of the plane.

One firefighter, Leo Wheeler, recalled that by the time the rescuers had arrived, Kelley already was sending his coordinates by radio for the helicopter pickup.

"There were still some shooting flames, but it looked like just out of the wiring," Wheeler said. "And we were still about two miles away from the plane."

Jets Collide Over Utah; Pilots Live

BY JOHN HEILPRIN

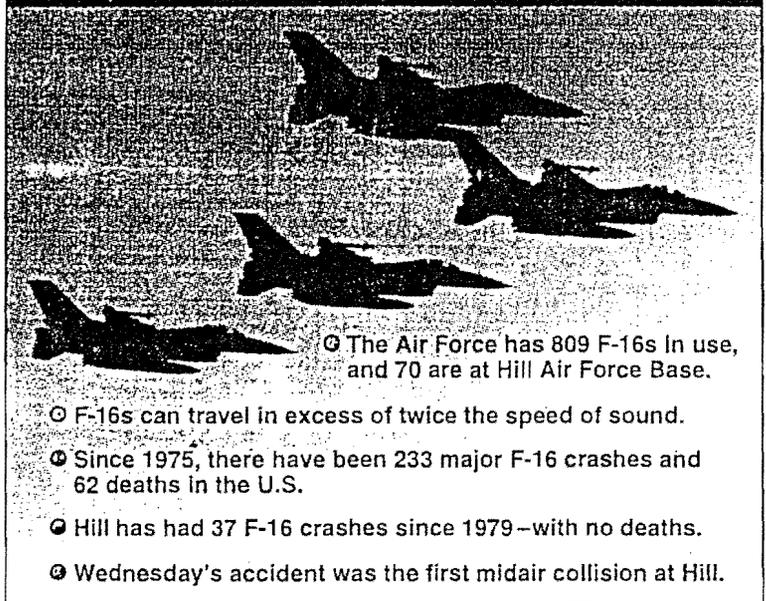
THE SALT LAKE TRIBUNE

Two Air Force F-16C fighter jets collided in midair during a training run Wednesday, injuring both pilots and destroying one of the \$20 million aircraft.

Pilots Paul Hertzberg and Scott Hufford were treated for minor injuries from the 1:30 p.m. collision over the Utah Test and Training Range, 105 miles west of Hill Air Force Base, officials said.

Hertzberg safely ejected from his crippled jet, which crashed in a fireball. Hufford managed to land his damaged single-engine fighter at Michael Army Airfield at Dugway Proving Ground. Both pilots are with the 421st Fighter Squadron.

F-16 Facts



Ⓞ The Air Force has 809 F-16s in use, and 70 are at Hill Air Force Base.

Ⓞ F-16s can travel in excess of twice the speed of sound.

Ⓞ Since 1975, there have been 233 major F-16 crashes and 62 deaths in the U.S.

Ⓞ Hill has had 37 F-16 crashes since 1979—with no deaths.

Ⓞ Wednesday's accident was the first midair collision at Hill.

Hertzberg was picked up by a Utah Army National Guard helicopter about 17 miles from where the planes collided, and was flown to a hospital at the base for treatment. Hufford was treated at the scene.

The collision, which occurred over the remote area of western Utah desert, was the first midair collision for active-duty jets stationed at Hill since the base

See PILOTS, Page A-7

To: Clay Parr
Mike Later
Brian Allen

From: Steve Christiansen

Here are examples of more accidents in Tooele County associated with existing high risk facilities there.

Pilots Safe After Midair Collision

■ Continued from A-1

opened in 1940. The base oversees maintenance for more than 3,900 F-16s for the United States and 17 other nations.

"Luckily in this crash, since it happened on the range, there was nothing in the way," said Air Force spokesman Rob Koon, speaking from the Pentagon.

It wasn't the first midair crash in Utah. In 1987, a SkyWest Metroliner and Mooney aircraft crashed over Kearns, killing 12 people.

Wednesday's collision took place while six F-16Cs were training for air-to-air combat. Four jets in a fanlike formation were acting as the "blue air," or good guys. Two others, side-by-side, were taking the offensive as the "red air," or bad guys.

Hufford, on the red team, hit Hertzberg, on the blue team, while playing a supersonic game of hide-and-seek, according to Air Force officials. That much is known, though investigators likely will take months to figure out exactly what happened.

"Unfortunately, we can't be sure who collided with who," said Dennis Mehring, spokesman for the 388th Fighter Wing. "Fortunately, there were no reports of any serious injuries."

The F-16Cs were carrying inert AIM9 Sidewinder missiles bolted to the jets. During training, the missiles are used only for the electronic eye that pilots see through for targeting.

Fuel from Hertzberg's jet — one of 70 active-duty F-16s belonging to the 388th and 419th fighter wings at Hill — apparently caused the explosion.

"I don't know how much is left of it. Presumably not much,"

Mehring said. "We believe it to be a total loss."

An interim safety investigation board has been formed to probe the cause of the incident, officials said, while a convoy of military personnel was dispatched to the scene Wednesday night.

The Air Force has 809 F-16s in use, including those at Hill. There are four types: A and C are single-seaters, while B and D are two-seaters.

Last year, during more than 369,000 collective flying hours, there were 11 major accidents in the United States and one death involving the jets.

Hill was the first base to have an operational wing for F-16s. It also is the nation's only major maintenance base for F-16s, which can travel faster than twice the speed of sound, or more than 1,200 mph.

Since the fighters arrived at Hill in 1979, there have been 37 F-16 crashes — and no deaths.

Last February, for example, two Hill pilots were injured when their two-seater F-16 was struck by a bird. Midair crashes by U.S. military planes are rare, however.

There have been three recent ones outside Utah. Last March, two F-16s collided over the Gulf of Mexico on a training run.

Then in September, two more midair collisions occurred. A U.S. C-141 and a German TU-154 struck each other off the coast of Africa, killing nine Americans and 24 Germans.

Just three days later, two F-16s collided in midair during routine training at New Jersey.

In those F-16 crashes — as in Wednesday's collision in Utah — one pilot ejected safely while the other landed the plane.

Hill spokesman Bruce Collins said it takes months for the military to determine the cause of a crash or collision.

"Usually we're not going to find a single cause," Collins said, "since most accidents are caused by number of factors that all come together at the wrong time."

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FOR MORE DETAILS
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EXHIBIT 11

To: BTA
From: SJC

Envirocare Fined for Excess Radiation

Landfill Operator Planning To Appeal \$100,000 Levy; 'Careless Disregard' Cited

BY JIM WOOLF

THE SALT LAKE TRIBUNE

Envirocare of Utah has been ordered to pay a \$100,000 fine for exceeding state rules regarding the amount of radioactive material that can be held in storage prior to disposal.

"We're going to appeal it," Envirocare president Charles Judd said Wednesday. "We've been discussing this for a while and we got to a point where we weren't able to come to an agreement."

This is the largest fine the Utah Division of Radiation Control has ever sought against Envirocare, which operates a landfill for low-level radioactive and hazardous wastes in Tooele County.

Another state agency — the Utah Division of Solid and Hazardous Waste — in October collected a \$197,000 fine from Envirocare for unrelated violations.

The Division of Radiation Control first proposed the \$100,000 penalty in May after an inspection found Envirocare's stockpile of wastes awaiting disposal contained too much of three radioactive isotopes used in the production of nuclear weapons.

These so-called "special nuclear materials" (SNM) are strictly regulated to prevent them from falling into the hands of terrorists. There was virtually no risk of

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this happening at Envirocare because the SNM was mixed with other wastes and would have been difficult to extract. Even so, state regulators said Envirocare should be fined for "careless disregard" for the rules.

Judd said state and company officials disagree when wastes are "accepted" for disposal at the Envirocare site. The company's position is that wastes shipped to the site are not accepted for disposal until they have been sampled one last time to assure they have the chemical consistency claimed by the shipper.

Until this testing is done, the wastes may

be within Envirocare's gates but the company hasn't officially accepted them for disposal. Radioactive elements in this material awaiting acceptance cannot be counted against the company's total, argued Judd. If calculated this way, he said the company would not have violated the rule.

But Bill Sinclair, director of the Utah Division of Radiation Control, said once wastes are under Envirocare's control their radioactive contents must be counted under the SNM rule. Calculated this way, Envirocare greatly exceeded the maximum SNM level in storage.

Investigators from the U.S. Nuclear Regulatory Commission also are reviewing Envirocare's SNM situation and could take their own enforcement action for violation of federal rules regarding these materials.

EXHIBIT 12

Greenwire: 11/20/97

*6 CHEMICAL WEAPONS: TOOELE CITED FOR HAZWASTE VIOLATIONS

The state of Utah on 11/17 issued 25 citations to the Army's Tooele County chemical weapons incinerator for violations of state hazardous waste rules between 8/96 and 8/97.

None of the violations were serious enough to force closure of the facility and none "endangered workers or the environment," according to Dennis Downs, director of the Utah Division of Solid and Hazardous Waste. Most of the violations involved clerical errors, failure to follow standard operating procedures, and "routine inspections slipping behind schedule."

Henry Silvestri, general manager of EG&G Defense Material Inc., an Army contractor which manages the site, said most of the violations were reported by EG&G workers (Greenwire, 12/2/96) and "all were corrected soon after being discovered."

Penalties have yet to be determined, but the more serious violations carry maximum fines of \$10,000 per incident (Jim Woolf, Salt Lake Tribune, 11/18). Plant spokesperson Jon Pettebone said the plant is being monitored "round-the clock" by plant and state officials to ensure worker and public safety (Joe Bauman, Salt Lake Deseret News, 11/18).

To: CJP

From: STC

EXHIBIT 13

AMENDED AND RESTATED BUSINESS LEASE

between

SKULL VALLEY BAND OF GOSHUTE INDIANS,
a federally recognized Indian Tribe

and

PRIVATE FUEL STORAGE, L.L.C.,
a Delaware limited liability company

May 20, 1997

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EXHIBITS AND ATTACHMENT TO THE BUSINESS LEASE

Exhibit "A"	Facility Site
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Exhibit "C"	Buffer Zone
Exhibit "D"	Map
Exhibit "E"	Annual Expense Escalators
Attachment "I"	Valid Existing Leases, Easements, Rights-of-Way and/or Other Encumbrances and/or Restrictions

CONFIDENTIAL AND PRIVILEGED

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

Lease No. _____
Approved: _____

THIS AMENDED AND RESTATED BUSINESS LEASE, (this "Lease"), made and entered into this 20th day of May, 1997, but effective for all purposes as of December 27, 1996, by and between the Skull Valley Band of Goshute Indians, a federally recognized Indian Tribe, as lessor (the "Band"); and the Private Fuel Storage, L.L.C., a Delaware limited liability company, as lessee, its successors and assigns (the "L.L.C."), in accordance with the provisions of the Act of August 9, 1955 (69 Stat. 539; 25 U.S.C. § 415), as amended, and as supplemented by the regulations (48 C.F.R. Part 162), which by reference are made a part hereof unless superseded by the terms and conditions of this Lease. The Band and the L.L.C. may individually be referred to as a "Party" or collectively be referred to as "Parties" herein.

RECITALS

WHEREAS, the Band is a federally recognized Indian tribe possessed of all sovereign and rights pertaining thereto;

WHEREAS, the Band conducts its tribal business through a General Council comprised of eligible membership of the Band and an Executive Committee, a three-member governing body created by the General Council;

WHEREAS, the General Council authorized the Executive Committee to enter into negotiations for the building of an interim storage facility for spent nuclear fuel on the Skull Valley Indian Reservation in Tooele County in the State of Utah (the "Reservation") through General Council Resolution No. 94-02 dated February 19, 1994;

WHEREAS, the primary business purpose of the L.L.C. is to provide temporary storage of Spent Nuclear Fuel;

WHEREAS, to provide economic and employment benefits to the Band and to meet the need for interim spent nuclear fuel storage, the Band and certain individual utility companies have authorized the feasibility of the development, construction, financing, ownership and operation of a new interim spent nuclear fuel storage facility (the "Facility") by the L.L.C., such Facility to be located on a portion of the Reservation;

WHEREAS, the Band has authorized entry into this Lease through General Council Resolution No. 97-12A dated December 7, 1996 and Resolution Attachment No. 97-12A(1) dated December 12, 1996 and April 12, 1997 (collectively the "Resolutions");

NOW, THEREFORE, in consideration of the foregoing and the mutual promises contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, agree as follows:

SECTION 1. LEASE; LAND DESCRIPTION

A. Facility Site. For and in consideration of the rents, covenants and agreements hereinafter set out, the Band hereby leases and lets to the L.L.C. for the L.L.C.'s exclusive use and control the lands described and identified in Exhibit "A" attached hereto (the "Facility Site") which Exhibit "A" is made a part hereof by reference, and all of which lands are located within the Reservation in Tooele County, State of Utah, containing 820 acres, more or less. The L.L.C. shall have exclusive control and use of the Facility Site. The L.L.C. shall have the right to promptly remove any persons, equipment, or vehicles from the Facility Site. During the term of this Lease, no activities of any type may be undertaken on the Facility Site without the prior written consent of the L.L.C. The Parties agree that the L.L.C. will provide physical security for the Facility Site as necessary to comply with NRC regulations and the License or as the L.L.C. may otherwise deem necessary. This may include, without limitation, appropriate fencing.

B. Easements and Rights-of-Way. For and in consideration of the rents, covenants and agreements hereinafter set out, the Band hereby grants an exclusive easement and right-of-way to the L.L.C. to use the lands described and identified in Exhibit "B" attached hereto (the "ROW's"), which Exhibit "B" is made a part hereof by reference, and all of which lands are located within the Reservation, containing 202 acres, more or less, which lands shall be used for purposes of ingress and egress, highway, rail and other means of transportation, utility lines and facilities, water rights and similar purposes. The L.L.C. will appropriately fence routes of ingress and egress, including roadways and/or rail lines.

During the term of this Lease, the L.L.C. shall have the irrevocable option at a compensation amount to be agreed upon by the parties in good faith to lease or obtain a grant of additional easements and rights-of-way within the Reservation west of the Skull Valley Road which the L.L.C. shall deem necessary or appropriate for the development, construction, operation and decommissioning of the Facility, including, but not limited to, easements and rights-of-way for ingress and egress, roads and railroad spurs, other means of transportation, utility lines and facilities, water rights and similar purposes. The Band and the Secretary shall grant or consent to such easements or rights-of-way pursuant to applicable federal laws and regulations, including 25 U.S.C. § 415 and 25 C.F.R. Part 162 or 25 U.S.C. §§ 323 et seq. and 25 C.F.R. Part 169.

C. Buffer Zone. For and in consideration of the rents, covenants and agreements hereinafter set out, the Band hereby leases and lets unto the L.L.C. certain lands to constitute a buffer zone around the Facility Site, which shall include those lands described and identified on Exhibit "C" attached hereto, (the "Buffer Zone") and on the map attached hereto as Exhibit "D", which exhibits are made a part hereof by reference, and all of which lands are located within the Reservation, in Tooele County, State of Utah, containing 3,020 acres, more or less, subject to any prior valid existing leases, easements, rights-of-way and other encumbrances and/or restrictions. All such valid existing leases, easements, rights-of-way and other encumbrances and/or restrictions are set forth on Attachment I. The Band and the L.L.C. hereby covenant and agree that only the land uses currently existing on the Buffer Zone will be permitted to continue during the term of this Lease unless another use is permitted by the prior written consent of both parties; provided that, the L.L.C. shall be allowed (i) to conduct, or have conducted, environmental, radiological, meteorological or other monitoring or sampling if required for the Project and (ii) to undertake all activities that may be required by the License, the NRC, or other applicable laws or governmental regulations and requirements. The Band hereby stipulates that the sole existing land use for the Buffer Zone is limited to livestock grazing, with the exception of that portion of "Parcel C" (as defined in the "Alliant Lease" as set forth on Attachment I) lying within Section 17, T5S, R8W; provided, however, that the uses of such Parcel "C" lands shall be limited solely to those uses and those parties set forth in the Alliant Lease and that such uses shall expire upon the termination of the Alliant Lease. The Band shall not conduct, or allow others to conduct, any activity within the Buffer Zone that may be considered by the L.L.C. to be incompatible with the L.L.C.'s use of the Facility. The Band and the L.L.C. shall ensure that no activity of any type is undertaken in the Buffer Zone without the express prior written consent of both Parties.

D. Access Outside the Leased Premises. The L.L.C., and its employees and agents, shall have the same rights of access as other members of the general public to areas of the Reservation not included within the Leased Premises. To the extent that permission for such access is required by the Band, the L.L.C., and its employees and agents, shall request the prior written approval of the Executive Committee, which approval shall not be unreasonably withheld; provided, however, that upon notice to the Band, the L.L.C. shall be allowed to conduct, or have conducted environmental, radiological, meteorological or other monitoring or sampling if required for the Project.

E. Water Usage. For and in consideration of the rents, covenants and agreements hereinafter set forth, the L.L.C. shall have the right to drill water wells on the Leased Premises to provide sufficient water capacity and quality necessary for the day-to-day operations of the Facility. Title to the water will remain in the Band. Water Usage will be limited to employee consumption and light industrial use; no water will be used for the storage process. Water developed and used will be subject to the Band's environmental regulations that govern the quality of the Reservation's existing water supply, including reservoir water and water from wells drilled by the Band or third parties on the Reservation. If sufficient capacity and quality of water cannot be recovered from the wells, the L.L.C. may, at its own expense, connect to the existing water supply on the Reservation.

If the L.L.C. connects to the Reservation water system, the L.L.C. shall supply an additional 20,000 gallon water tank, if needed and requested by the Band, and shall make such other improvements to the existing water system that would be necessary as agreed by the Band and the L.L.C. to provide the Band and the L.L.C. with the benefits of the 20,000 gallon water tank.

SECTION 2. DEFINITIONS

“**Band**” means the Skull Valley Band of the Goshute Indians, a federally recognized Indian Tribe as listed on 61 Fed. Reg. 58211 (Nov. 13, 1996).

“**BIA**” means the Bureau of Indian Affairs of the United States Department of Interior, or any other agency or instrumentality of the United States government which at any time in the future carries out the current functions of the Bureau of Indian Affairs, or any successor thereto.

“**Commercial Operations Date**” means the date on which Spent Nuclear Fuel is first physically accepted by the Facility for storage.

“**Decommissioning Plan**” means a plan developed by the L.L.C. and approved by the NRC for the safe removal of the Facility from service and the reduction of residual radioactivity to levels required by NRC for termination of the Facility’s License.

“**Department of Interior**” means the United States Department of Interior, an agency of the government of the United States, or any other agency or instrumentality of the United States government which at any time in the future carries out the current functions of the United States Department of Interior, or any successor thereto.

“**DOE**” means the United States Department of Energy, an agency of the government of the United States, or any other agency or instrumentality of the United States government which at any time in the future carries out the current functions of the United States Department of Energy, or any successor thereto.

“**DOE Facility**” means a permanent repository or interim storage facility, owned by, under the control of, or with capacity contracted to the DOE or other government agency that can accommodate some or all of the Spent Nuclear Fuel which is owned by or otherwise under the control of the members of the L.L.C.

“**Executive Committee**” means the three member governing body elected by the General Council to conduct the day-to-day business of the Band, consisting of a Chairman, Vice-Chairman and Secretary.

“**Facility**” means the private, interim, Spent Nuclear Fuel storage facility which will be developed, constructed, owned and operated by the L.L.C. on the Leased Premises.

“Facility Site” means the 820 acres, more or less, described on Exhibit “A” upon which the Facility, supporting structures, and any improvements will be constructed and operated.

“General Council” means the entire adult membership of the Band.

“Goshute Tribal Courts” means all of the courts of the Band, whether traditional or otherwise, currently validly existing or validly established hereafter.

“Governmental Authority” means any national, state, local or tribal governmental authority or any subdivision thereof.

“Lease Payments” means all of the payments payable to the Band by the L.L.C. as further set forth in Section 5.

“Leased Premises” shall include all lands leased hereunder, including without limitation the Facility Site, the ROW's and the Buffer Zone.

“License” means a license from the NRC permitting the Facility to be constructed, owned and operated for the purpose of storing Spent Nuclear Fuel including any technical specifications and amendment thereto.

“L.L.C.” means the Private Fuel Storage, L.L.C., a limited liability company, organized and existing under the laws of the State of Delaware, and its successors and assigns.

“NEPA” means the National Environmental Policy Act of 1969.

“NRC” means the United States Nuclear Regulatory Commission, an instrumentality of the United States, or any successor thereto.

“Operating Expenses” has the meaning set forth in subparagraph G. of Section 5.

“Pre-Operational Exclusivity Fee” has the meaning set forth in Section 5.

“Profit” has the meaning as set forth in subparagraph G. of Section 5.

“Project” means the development, financing, construction, ownership, operation, and decommissioning of the Facility and its supporting structures.

“Reservation” means the Skull Valley Indian Reservation in Tooele County, in the State of Utah.

“Secretary” shall mean the Secretary of the Interior, or his authorized representative acting pursuant to delegated authority, or successor.

“Facility Site” means the 820 acres, more or less, described on Exhibit “A” upon which the Facility, supporting structures, and any improvements will be constructed and operated.

“General Council” means the entire adult membership of the Band.

“Goshute Tribal Courts” means all of the courts of the Band, whether traditional or otherwise, currently validly existing or validly established hereafter.

“Governmental Authority” means any national, state, local or tribal governmental authority or any subdivision thereof.

“Lease Payments” means all of the payments payable to the Band by the L.L.C. as further set forth in Section 5.

“Leased Premises” shall include all lands leased hereunder, including without limitation the Facility Site, the ROW’s and the Buffer Zone.

“License” means a license from the NRC permitting the Facility to be constructed, owned and operated for the purpose of storing Spent Nuclear Fuel including any technical specifications and amendment thereto.

“L.L.C.” means the Private Fuel Storage, L.L.C., a limited liability company, organized and existing under the laws of the State of Delaware, and its successors and assigns.

“NEPA” means the National Environmental Policy Act of 1969.

“NRC” means the United States Nuclear Regulatory Commission, an instrumentality of the United States, or any successor thereto.

“Operating Expenses” has the meaning set forth in subparagraph G. of Section 5.

“Pre-Operational Exclusivity Fee” has the meaning set forth in Section 5.

“Profit” has the meaning as set forth in subparagraph G. of Section 5.

“Project” means the development, financing, construction, ownership, operation, and decommissioning of the Facility and its supporting structures.

“Reservation” means the Skull Valley Indian Reservation in Tooele County, in the State of Utah.

“Secretary” shall mean the Secretary of the Interior, or his authorized representative acting pursuant to delegated authority, or successor.

"Secretary Approval" means the written approval and consent of this Lease by the Secretary, including without limitation the conditional approval of the Secretary pursuant to Section 4.

"Spent Nuclear Fuel" means fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing, the non-fuel components directly associated with such fuel which can be stored with the fuel assemblies, and any other components which the DOE Facility will accept.

SECTION 3. PURPOSE OF THIS LEASE

The L.L.C. shall develop, construct, own and operate the Facility and supporting structures to service the Facility, all of which shall be located on the Leased Premises. The Parties agree that the Facility shall be designed for a capacity of 40,000 metric tons, provided that a greater capacity shall be permitted if licensed by the NRC and approved by the Band. The L.L.C. shall not be required to commence any construction of the Facility or supporting structures prior to the issuance of the License.

SECTION 4. TERM

A. Initial Term; Irrevocable Option Renewal Term. Unless terminated earlier in accordance with Section 4.C. below, the initial term of this Lease shall be for a period of twenty-five (25) years (the "Initial Term"); provided, however, that the L.L.C. shall have and the Band hereby grants to the L.L.C. an irrevocable option to extend the term of this Lease for a separate, additional period of twenty-five (25) years (the "Renewal Term") with no further consent or approval required from the Band, the General Council, the Executive Committee, any other Tribal agency or entity or the Secretary. The Renewal Term shall be irrevocably exercisable by the L.L.C. giving written notice to the Band and the Secretary of its exercise of the same not less than one (1) year prior to the expiration of the Initial Term. The Renewal Term shall begin immediately upon the expiration of the Initial Term and shall be upon the terms and conditions, including compensation, set forth herein. The term of this Lease shall commence, and this Lease shall be effective for all purposes, upon the date this Lease is approved by the Secretary, including, without limitation, the conditional approval of the Secretary as set forth below.

In the event that the terms and conditions of this Lease have been agreed upon by the Band and the L.L.C. (as evidenced by their execution of this Lease) and the Secretary is prepared to approve this Lease but for the completion of the environmental analysis under the National Environmental Policy Act ("NEPA"), then the Secretary will conditionally approve this Lease subject only to the following conditions, and the L.L.C. may not commence construction of the Facility under this Lease unless and until such conditions are met:

(i) The NRC and BIA complete the environmental analysis required under NEPA;

(ii) This Lease is modified to incorporate mitigation measures identified in the record of decision, if any;

(iii) The Environmental Impact Statement is issued; and

(iv) The License is issued.

Upon the satisfaction of these conditions, the Secretary shall certify within 30 days that the conditions set forth in (i) through (iv) above are satisfied and shall authorize the L.L.C. to take possession and commence operations.

B. Cooperation. The Band shall cooperate with the L.L.C. in obtaining any additional approvals or consents as may be required in connection with the Project, including, without limitation, any of which may be required to be obtained from the General Council, the Executive Committee, the NRC, the Department of Interior or the DOE.

C. Termination of Lease. Unless otherwise earlier terminated in accordance with the provisions set forth in Section 4.C.(1) and (2) below, this Lease shall terminate on the date of the NRC's termination of the License following completion of the final decommissioning of the Facility in accordance with the Decommissioning Plan, or the expiration of the Renewal Term; whichever is the earlier (the "Termination Date").

(3) Effectiveness of Termination. If a termination notice is given by a Party in accordance with the provisions of Section 4.C.(1), such termination shall become effective upon the effective date of termination stated in such notice, which date shall be no earlier than 45 days and no later than 360 days after the event giving rise to such termination notice. If this Lease is terminated pursuant to Section 4.C.(2), it will terminate upon the final termination of the License. If this Lease is so terminated, it will become null and void, and there will be no liability or obligation on the part of any Party (or any of its officers, directors, employees, agents or other representatives or affiliates) to the other Parties from and after the effective date of termination, including without limitation any obligation to make the payments specified in Section 5 which accrue after such termination date, except that the provisions of Sections 8, 14, 27, 32, 35 and 36 C, F, and H will survive and continue to apply following any such termination.

SECTION 5. LEASE PAYMENTS

17/2

17/2

17/2



Payments set forth in Section 5.B through 5.E shall increase by an amount negotiated in good faith by the Band and the L.L.C.

I. Payments. All payments will be considered to be made when the check is placed in the United States Mail, postage prepaid, or the funds have been wire-transferred.

SECTION 6. PAYMENT OF RENTS/INTEREST

The pre-operational payments set forth in Section 5.A.(1) and 5.A.(2) shall be paid to the Band without prior notice or demand. All other payments hereunder shall be paid to the Band through the Secretary unless direct payments are authorized by the Secretary. Past due rental payments received more than thirty (30) days after the due date shall bear interest at the rate of [REDACTED]

(whichever is the greater) per annum from the due date until paid. This provision shall not be construed to relieve the L.L.C. from its obligation to make timely rental payments or to deny the Band any rights or remedies for a material breach.

SECTION 7. L.L.C. RESPONSIBLE FOR DEVELOPMENT AND DECOMMISSIONING

A. Development and Improvement. The L.L.C. agrees that construction of all Facility buildings, supporting structures and improvements will be completed at the sole cost and expense of the L.L.C. or its designees or licensees and that neither the Band, the Secretary nor the Band's interest in the Leased Premises shall be responsible for or subject to acts or expenses of the L.L.C. relating to the construction of buildings and improvements on the Leased Premises. Unless otherwise provided herein, upon the termination or expiration of this Lease in accordance with the provisions herein, it is understood and agreed that any buildings or other improvements shall become the property of the Band or, at the option of the Band, will be removed by the L.L.C. at its expense.

B. Radiological Decommissioning. On termination of operations, the L.L.C. shall radiologically decommission the Facility and supporting structures in accordance with the Decommissioning Plan as approved by the NRC and take steps to secure the termination of the License.

C. Non-Radiological Decommissioning. At the option of the Band, non-radiological decommissioning and restoration of the Facility are expected to include the removal of structures and reasonably returning the land to its original condition.

D. Decommissioning Plan. The Decommissioning Plan shall contain the funding plan to provide financial assurance for decommissioning under 10 C.F.R. § 72.30, shall comply with the requirements of 10 C.F.R. § 72.22 and § 72.54, and shall further meet all other requirements under applicable federal regulations.

SECTION 8. REMOVAL OF IMPROVEMENTS

Subject to the provisions of Section 7 hereof, removable personal property and trade fixtures of the L.L.C. on the Leased Premises may be removed. The term "removable personal property and trade fixtures" as used in this Section shall not include property which normally would be attached or affixed to the buildings, improvements, or land in such a way that it would become a part of the realty, regardless of whether such property is in fact so placed in, or on, or affixed to the buildings, improvements, or land in such a way as to legally retain the characteristics of personal property. Removable personal property and trade fixtures may be removed by the L.L.C. at any time during the term of this Lease or within ninety (90) days after termination or expiration of this Lease or within such other reasonable time after the termination of this Lease as may be agreed upon between the Band and the L.L.C. If the L.L.C. fails to remove the same within ninety (90) days after termination or expiration of this Lease, or such other reasonable time as agreed upon, said fixtures and property shall be deemed abandoned and shall become the property of the Band.

SECTION 9. INSURANCE

A. Nuclear Liability Insurance. Prior to the Commercial Operations Date, the L.L.C. shall obtain a commercially reasonable amount of nuclear liability insurance. The L.L.C. shall provide copies of all such coverage to the Band and the Secretary.

B. Workers' Compensation. The L.L.C. shall comply with all applicable State of Utah workers' compensation laws and shall maintain workers' compensation insurance in the same manner and to the same extent as any enterprise or business authorized to do business on the Reservation or in the State of Utah; provided, however, that if workers' compensation covers any claim, the L.L.C. shall have no further liability with respect to the same claim. The L.L.C. shall ensure that all contractors for the Facility maintain workers' compensation insurance in the same manner and to the same extent as any enterprise or business authorized to do business on the Reservation or in the State of Utah. The L.L.C. shall provide copies of all such workers' compensation coverage to the Band.

C. Other Insurance. The L.L.C. shall maintain all other insurance required by any applicable federal or state law or regulation, including without limitation any NRC regulation, and shall maintain other insurance which the L.L.C. deems necessary or appropriate, including, but not limited to, fire and damage insurance, primary comprehensive general and automobile liability, contractual liability insurance, general errors and omissions insurance, directors and officers insurance and business interruption insurance.

D. Contractor's Insurance. The L.L.C. shall require all contractors and subcontractors to maintain all insurance coverages required by law or regulation and to maintain any other insurance of the types and in the amounts normally maintained by similar businesses in such contractor's field.

E. Co-Insureds. To the extent possible and commercially practicable, the L.L.C. shall cause each insurance policy maintained pursuant to this Section 9, other than subsection 9.B, to list the Band, the United States, and each of the members of the L.L.C. as additional insureds.

SECTION 10. SURETY BOND

The Band and the Secretary waive any obligation of the L.L.C. to post a surety bond; provided that at any time during the term of this Lease, the Secretary may, only upon the L.L.C.'s failure to pay the Lease Payments in accordance with the provisions of Section 5 hereof, require the L.L.C. to post a bond satisfactory to the Secretary in a penal sum of not less than the preceding quarter's prorated share of the Annual Rental, which bond shall be deposited with the Secretary. Any other type of security which may be offered by the L.L.C. to satisfy the requirement of this Section will be given reasonable consideration by the Secretary, but it is agreed that acceptance of other security shall be at the sole reasonable discretion of the Band and the Secretary. It is agreed that the bond required by this Section will guarantee payment of the Lease Payments only, and ~~then~~ for only such portion of the Lease Payments which are expressly covered by the bond.

SECTION 11. SUBLEASE, ASSIGNMENT, TRANSFER

Except as otherwise provided in this Section 11, the L.L.C. shall not assign or transfer any right to or interest in this Lease without the written consent of the Band and the Secretary, with the exception of encumbrances as provided in Section 15 hereof. No such assignment or transfer shall be valid or binding without said consent and approval and then only upon the condition that the assignee has agreed in writing that in the event of conflict between the provisions of this Lease and of said assignment, the provisions of this Lease shall prevail. Notwithstanding the foregoing provisions, upon notice to the Band and the Secretary, and proof that all insurance policies are continuing, the L.L.C. shall have the right to assign this Lease to any entity wholly owned by the L.L.C., with no further approval required from the Secretary or the Band; provided, however, that the assignee shall agree in writing to be bound by all the terms and conditions of this Lease. The term of any assignment shall not exceed the term of this Lease and any extensions hereof. Any assignment made, except as provided in this Section, shall be deemed a breach of this Lease, and shall be null and void and of no force and effect.

SECTION 12. UTILITY FACILITIES

The L.L.C. shall have the right to enter into agreements with public and private utility companies, the Band, the State of Utah or any of the state's political subdivisions to provide utility services necessary for the full development and enjoyment of the Leased Premises in accordance with this Lease. Upon entering into any such agreement, the L.L.C. shall furnish the Band and the Secretary with executed copies thereof together with a plat or diagram showing the true location of

the utility lines and facilities to be constructed. The L.L.C. shall be responsible for contracting for solid waste removal from the Facility Site.

SECTION 13. QUIET ENJOYMENT

The Parties and the Secretary acknowledge that it is their intent that the L.L.C. shall have quiet enjoyment of the Leased Premises and the Facility throughout the term of this Lease, and that the L.L.C. and its employees, contractors, vendors, agents, designees, assigns and representatives, and all persons who need access to the Leased Premises to provide emergency and security services, shall have uninterrupted access to the Leased Premises and the Facility at all times.

SECTION 14. ACCESS BY NRC

The Band and the L.L.C. hereby covenant and agree that they will in no way restrict the access by the NRC or its contractors to the Leased Premises or Facility at any time.

SECTION 15. ENCUMBRANCE

This Lease, or any right to or interest in this Lease, or any of the improvements on the Leased Premises, may be encumbered by the L.L.C. with no further approvals required from the Band or the Secretary; provided, however, that an encumbrance shall be permitted only in connection with obtaining financing for the development or construction of the Facility or structures on the Facility Site and/or improvement of the Leased Premises and shall be confined to the leasehold interest of the L.L.C. and improvements thereon; provided, further, that any such encumbrance shall terminate upon full repayment of such financing, which is expected to occur prior to the termination of this Lease.

The L.L.C. agrees to furnish the Band and the Secretary, upon written request, any specific information regarding the status of the encumbrance at any time during the term of this Lease. The Band and the Secretary hereby consent to such encumbrances subject to the terms and conditions of this Section. Neither the Band nor the Secretary shall have the right to encumber the Leased Premises or the Facility.

SECTION 16. DEFAULT

A. Breach by the L.L.C.

(1) Prior to the Commercial Operations Date. In the event of a material default or breach by the L.L.C. of any of the material terms and provisions

of this Lease prior to the Commercial Operations Date, the Band and the Secretary shall give notice to the L.L.C. citing such default and allow the L.L.C. ninety (90) days from receipt of said notice to correct the alleged default; provided, however, that in the event of a default or breach by the L.L.C. of any term or provision of this Lease requiring the payment of money by the L.L.C. to the Band, the period of time to correct the alleged default shall be thirty (30) days. In the event that said alleged default is not corrected within said ninety (90) days (or said thirty (30) days for payments by the L.L.C. to the Band), the Band and the Secretary shall give notice to the L.L.C. of the failure of the L.L.C. to correct the alleged default and shall specify that the L.L.C. has ten (10) days from receipt of said notice to correct the alleged default or to show cause why this Lease should not be canceled. The Band and the Secretary may grant a reasonable extension of time if the L.L.C. so requests.

If the default has not been corrected and the L.L.C. fails to show cause to the satisfaction of the Band and the Secretary why this Lease should not be canceled, the Secretary may terminate this Lease by written notice of cancellation, and the L.L.C. shall quit and surrender the Leased Premises to the Band. The Band and the Secretary may proceed by suit or otherwise to enforce collection of any funds then owed by the L.L.C. which were incurred and payable prior to such cancellation notice. The L.L.C. shall have the right of appeal pursuant to 25 C.F.R. Part 2.

(2) Subsequent to the Commercial Operations Date. In the event of a material default or breach by the L.L.C. of any of the material terms and provisions of this Lease subsequent to the Commercial Operations Date, this Lease shall not be subject to immediate termination, but the Band and the Secretary shall instead be limited to (i) an action for monetary damages or (ii) petitioning the NRC for relief, including without limitation, the decommissioning of the Facility, or (iii) otherwise to enforce all of its rights pursuant to this Lease by any and all actions at law and/or in equity, excluding termination.

In the event of a material default by the L.L.C. of any of the material terms and provisions of this Lease subsequent to the Commercial Operations Date, the Band or Secretary shall give notice to the L.L.C., citing such default and allow the L.L.C. ninety (90) days from receipt of said notice to correct the alleged default; provided, however, that in the event of a default or breach by the L.L.C. of any term or provision of this Lease requiring the payment of money by the L.L.C. to the Band, the period of time to correct the alleged default shall be thirty (30) days. In the event that said alleged default is not corrected within said ninety (90) days (or said thirty (30) days for payments by the L.L.C. to the Band), the Band or Secretary shall give notice to the L.L.C. of the failure of the L.L.C. to correct the alleged default and shall specify that the L.L.C. has ten (10) days from receipt of said notice

to correct the alleged default or to show cause why the Secretary should not bring an action for damages against the L.L.C. or to petition the NRC for relief. The Band or the Secretary may grant a reasonable extension of time if the L.L.C. so requests. The L.L.C. shall have the right of appeal pursuant to 25 C.F.R. Part 2.

B. Breach by the Band.

(1) Prior to the Commercial Operations Date. In the event of a material default or breach by the Band of any of the terms and provisions of this Lease prior to the Commercial Operations Date, the L.L.C. shall give notice to the Band and the Secretary citing such default and allow the Band ninety (90) days from receipt of said notice to correct the alleged default. In the event that said alleged default is not corrected within said ninety (90) days, the L.L.C. shall give notice to the Band and the Secretary of the failure of the Band to correct the alleged default and shall specify that the Band has ten (10) days from receipt of said notice to correct the alleged default or to show cause why this Lease should not be canceled. The L.L.C. may grant a reasonable extension of time if the Band so requests.

If the default has not been corrected and the Band fails to show cause to the satisfaction of the L.L.C. why this Lease should not be canceled, the L.L.C. may terminate this Lease by written notice of cancellation, and may quit and release the Leased Premises to the Band, with no further obligations, payment or otherwise, under this Lease, from the date of default or breach.

(2) Subsequent to the Commercial Operations Date. In the event of any material breach by the Band of any of the terms and provisions of this Lease subsequent to the Commercial Operations Date, the L.L.C. shall also have the right to declare the Band in default of any of the terms and provisions of this Lease pursuant to the provisions of this Section and to enforce all of its rights pursuant to this Lease by any and all actions at law and/or in equity.

SECTION 17. OBLIGATIONS OF THE L.L.C. AND THE BAND

A. Change of Name or Structure. The L.L.C. shall furnish the Band and the Secretary documentary evidence of any change in name or structure of its organization within thirty (30) days after such change. The L.L.C. shall also keep the Band and the Secretary informed of any change of person and/or persons authorized to represent the L.L.C. and execute documents on behalf of the L.L.C. and shall furnish the Band and the Secretary documentary evidence of such change in authority within thirty (30) days after any such change.

B. Taxes and Regulations.

C. Further Covenants. The Band hereby covenants and agrees that it shall use its sovereign nation status to support and promote this Lease and the Project, including but not limited to the passage of applicable land use, zoning, environmental and other laws, as necessary, to support and implement this Lease and the Project. The Band shall assist the L.L.C. in obtaining all required permits, licenses and approvals necessary for this Lease and the Project. The Band shall not, at any time, pass any law, rule or regulation which could adversely affect or burden this Lease or the Project, directly or indirectly, including any activity or action directly or indirectly related to this Lease or the Project, or any law, rule or regulation establishing land use, zoning, environmental regulation or other prohibition or land status which adversely affects or burdens the Project, unless and to the extent required by federal law.

The L.L.C. and the Band further covenant and agree that each will cooperate in emergency planning, environmental mitigation and public disclosure. All notices to third parties and other publicity concerning the transactions contemplated by this Lease shall be jointly planned and coordinated by and between the L.L.C. and the Band; provided, however, that this restriction shall not extend (i) to the Band as it may be necessary to respond to the BIA or (ii) to the L.L.C. in its discussions or negotiations with prospective members, lenders, customers, vendors, other service providers or as may be necessary in connection with the filing of the License or to respond to any governmental agency or court or any regulator of any members of the L.L.C.

D. Employment Preferences. The L.L.C. shall take all reasonable steps to employ the following classes of persons in the following order of priority for all positions (including skilled,

technical and management positions) for which they are qualified based upon their training and/or experience: First, members of the Band; second, children of members of the Band; and third, members of other federally recognized Native American Indian Tribes; provided that the foregoing employment preferences shall be valid only to the extent that they are in compliance with federal law.

E. Fire Fighting Capability. The Parties shall cooperate to insure integration of fire fighting resources and capability in accordance with the License and to insure that grass fires originating off the Facility Site are contained. The Facility staff will not be drawn below its minimums to be specified in the License.

SECTION 18. PAYMENTS AND NOTICES

All payments, notices, demands, requests, or other communications which may be or are required to be given, served, or sent by any party to any other party pursuant to this Lease shall be in writing and shall be mailed by first-class, registered or certified mail, return receipt requested, postage prepaid, or transmitted by hand delivery (including delivery by courier), telegram, facsimile transmission, addressed as follows:

(1) If to the L.L.C.:

Private Fuel Storage, L.L.C.
c/o Genoa Fuel Tech, Inc.
3200 East Avenue
LaCrosse, Wisconsin 54602
Attention: John D. Parkyn
Telephone: (608) 787-1236
Telecopy: (608) 787-1462

with copies (which shall not constitute notice) to:

Hogan & Hartson L.L.P.
555 Thirteenth Street, N.W.
Washington, D.C. 20004-1109
Attention: Claudette M. Christian
Telephone: (202) 637-5650
Telecopy: (202) 637-5910

and

Hall, Estill, Hardwick, Gable,
Golden & Nelson, P.C.
320 South Boston Avenue, Suite 400
Tulsa, Oklahoma 74103-3708
Attention: Margaret A. Swimmer
Telephone: (918) 594-0426
Telecopy: (918) 594-0505

(2) If to the Band:

Skull Valley Band of Goshute Indians
c/o Tapai Project Office
2480 S. Main, Suite 110
Salt Lake City, Utah 84115
Attention: Beverly Slack
Telephone: (801) 474-0535
Telecopy: (801) 474-0534

with copies (which shall not constitute notice) to:

Leon D. Bear, Chairman
P. O. Box 150
Grantsville, Utah 84029
Telephone: [REDACTED]
Telecopy: [REDACTED]

(3) If to the Secretary:

Secretary of Interior,
Bureau of Indian Affairs
Uintah and Ouray Agency Superintendent
P. O. Box 130
Fort Duchesne, Utah 84026
Attention: David L. Allison, Superintendent
Telephone: (801) 722-4300
Telecopy: (801) 722-2323

Each Party may designate by notice in writing a new address to which any notice, demand, request or communication may thereafter be so given, served or sent. Each notice, demand, request, or communication which shall be mailed, delivered or transmitted in the manner described above shall be deemed sufficiently given, served, sent and received for all purposes at such time as it is delivered to the addressee (with the return receipt, the delivery receipt, or the affidavit of messenger being

deemed conclusive (but not exclusive) evidence of such delivery) or at such time as delivery is refused by the addressee upon presentation.

SECTION 19. INSPECTION

The Secretary and Band or their authorized representatives shall have the right, at any reasonable times during the term of this Lease and subject to NRC restrictions, *e.g.*, relating to physical security or radiological health and safety, to enter upon the Leased Premises to inspect the same.

SECTION 20. DELIVERY OF PREMISES

At the termination or expiration of this Lease and any extensions thereto and subsequent to decommissioning as provided in Section 7 hereof, the L.L.C., pursuant to the terms and conditions hereof, will peaceably and without legal process deliver up the possession of the Leased Premises in good condition, reasonable wear and tear excepted, subject to the rules and regulations of the NRC.

SECTION 21. LEASE BINDING

This Lease and the covenants, conditions and restrictions hereof shall extend to and be binding upon the successors and permitted assigns of the Parties. While the Leased Premises are in trust or restricted status, all of the L.L.C.'s obligations under this Lease, and the obligations of its sureties, are to the United States as well as to the Band. Nothing contained in this Lease shall operate to delay or prevent a termination of Federal trust responsibilities with respect to the land by the issuance of a fee patent or otherwise during the term of this Lease; however, such termination shall not serve to abrogate this Lease. The owners of the land and the L.L.C. and its surety or sureties shall be notified of any such change in the status of the land.

SECTION 22. INTEREST OF MEMBER OF CONGRESS

No member of, or delegate to, Congress or Resident Commissioner shall be admitted to any share or part of this Lease or to any benefit that may arise here from, but this provision shall not be construed to extend to this Lease if made with a corporation or company for its general benefit.

SECTION 23. VALIDITY

This Lease, and any modification or amendment to this Lease, shall not be valid or binding upon the Parties until approved by the Secretary, or conditionally approved pursuant to Section 4.

As promptly as possible following the execution and delivery by the Band of this Lease, the Band shall submit this Lease to the Secretary for Secretary Approval, and the Band shall take all other necessary and appropriate actions in order to obtain a Secretary Approval for this Lease. The Band covenants and agrees that it shall not pass any law, rule, referendum or regulation, nor modify the Tribal traditions or governing documents in any manner, nor cause or permit, to the extent possible, the General Council, the Executive Committee, any tribal commission or any tribal agency to pass any ordinance, resolution, law or regulation, which shall rescind, abrogate, modify or amend any approval of the Band, the General Council, the Executive Committee, any tribal commission or any tribal agency of this Lease or any of the obligations or transactions described herein.

SECTION 24. APPROVAL BY THE BAND AND/OR SECRETARY

Whenever under the terms of this Lease the acceptance, consent or approval of the Band and/or the Secretary is required, said acceptance, consent or approval shall not be unreasonably withheld.

SECTION 25. FORCE MAJEURE/FRUSTRATION OF PURPOSE

A. Force Majeure. No Party shall be liable for any breach, delay, nonperformance or damages because of that Party's inability to perform its obligations, excluding payment obligations, under this Lease, in whole or in part, when such inability is caused, or is materially contributed to, by any of the following (each a "Force Majeure Event"):

(1) fire, earthquake, explosion, lightning, epidemic, cyclone, flood, drought, hazardous weather, landslide, collision, storm, disease, pestilence and other actions of the elements, natural calamity or Act of God;

(2) failure of machinery, casualty or accident, lack of or failure in whole or in part of transportation facilities, communication facilities, power, materials or supplies;

(3) strike, lockout, labor dispute, delay or any other difficulties with employees, agents or independent contractors, for whatever reason, by any group or individuals;

(4) civil commotion, protests, unrest, riots or disorders, acts of the public enemy, or other belligerents, terrorism, sabotage, blockade or embargo;

(5) any act of any Governmental Authority or any person purporting to act as any such Governmental Authority or any group or combination of any such Governmental Authorities, including but not limited to (i) the promulgation of any law, order, proclamation, resolution, statute, regulation, ordinance, demand or requirement of any Governmental Authority, (ii) agreements between any Government Authorities; and (iii) the total or partial expropriation, nationalization, confiscation, allocation, or requisition by a Governmental Authority;

(6) compliance (voluntary or involuntary) by any party or any third party with any law, order, proclamation, resolution, statute, regulation, ordinance, requirement, act or request of a Governmental Authority or any judgment, decree or other act of any court, tribunal or arbitral body; or

(7) any other acts whatsoever, whether similar or dissimilar to those above enumerated and whether foreseeable or unforeseeable, beyond the reasonable control of a Party.

Notwithstanding the foregoing, the Band shall not be excused or be permitted to avoid liability with respect to any Force Majeure Event which is a result of (i) any law, order, proclamation, resolution, statute, regulation, ordinance, requirement, act, or request of any Governmental Authority, (ii) agreements between any Government Authorities, or (iii) the total or partial expropriation, nationalization, confiscation, allocation, or requisition by a Governmental Authority imposed by, at the request of, or with the acquiescence of the General Council, the Executive Committee, the Band or any tribal commission or agency.

The Party claiming a Force Majeure Event shall give the other Parties oral notice of that Party's inability to perform as soon as reasonably possible after the occurrence resulting in the inability to perform and shall confirm such oral notice in writing within three (3) working days thereafter. If such Force Majeure Event renders such Party's performance hereunder impossible for a period of ninety (90) days or longer, the other Party shall have the right to extend this Lease for a comparable period of time.

B. Frustration of Purpose.

SECTION 26. ENVIRONMENTAL PROTECTION REQUIREMENTS

It is agreed that it shall be the responsibility of the L.L.C. to satisfy all environmental protection requirements as set forth in the National Environmental Policy Act of 1969 ("NEPA") and its implementing regulations. It is further agreed that the L.L.C. will furnish the Secretary a copy of all environmental assessments and/or environmental impact statements and/or will furnish such documents to other federal agencies, if required, and cooperate fully with the Secretary, the NRC or other federal agencies with regard to NEPA compliance. It is additionally agreed that the L.L.C., as directed by the Secretary and other federal agencies, will issue any notice to the public of the availability of all environmental assessments or environmental impact statements or reports and will provide the Secretary with appropriate evidence of said notice within ten (10) days of the issuance of such notice. The L.L.C. shall also satisfy the Band's environmental protection standards as adopted; provided however, that such tribal standards shall not exceed federal law.

SECTION 27. DISPUTE RESOLUTION; LIMITED
WAIVER OF SOVEREIGN IMMUNITY

So that the Band and the L.L.C. will be sure that it and/or they may enforce the terms and conditions of this Lease or resolve any dispute arising between the Parties, each of the Parties hereby covenants and agrees that each of them may sue or be sued to enforce or interpret the terms, covenants and conditions of this Lease or to enforce the obligations or rights of the Parties in accordance with the terms and conditions set forth in this Section.

A. Informal Resolution. Any disagreement or dispute arising between the Parties under this Lease shall be resolved, whenever possible, by meeting and conferring. A Party may request such a meeting by giving notice to the other, and the Parties shall meet within ten (10) days of the notice. If the disagreement or dispute cannot be resolved to the mutual satisfaction of the Parties within thirty (30) days after the meeting, then each Party shall have the rights as provided below.

B. Forum. Any controversy, dispute or claim arising out of or relating to this Lease, any modification or extension hereof, or any breach hereof shall be brought in any United States District Court or United States Court of Federal Claims, as applicable, in which the controversy may be heard or, if required, pursuant to 25 C.F.R. Parts 162 and 2, with rights of appeal to the appropriate federal court. If for any reason such United States District Court does not have or declines jurisdiction over the subject matter of the action, such controversy, dispute or claim shall be settled by binding arbitration as provided in Section 27.C below. For such purpose, each of the Parties hereby irrevocably submits to the non-exclusive jurisdiction of such courts and/or arbitrators.

C. Arbitration. In the event that each Party so agrees in writing or in the event the federal courts do not have or decline jurisdiction, any controversy, dispute or claim arising out of or relating to this Lease, any modification or extension hereof, or any breach hereof (including the question whether any particular matter is arbitrable hereunder) shall be settled by binding arbitration in accordance with the Center for Public Resources Rules for Non-Administered Arbitration of Business Disputes by three arbitrators, of whom the Party initiating the arbitration shall appoint one with the defending Party appointing one (with the third arbitrator being appointed by the other two arbitrators). The arbitration shall be governed by the United States Arbitration Act, 9 U.S.C. §§ 1-16, and judgment upon the award rendered by the arbitrators may be entered by any court having jurisdiction thereof as provided herein. The place of arbitration shall be Las Vegas, Nevada or any other city agreed upon by the Parties. The Parties shall bear equally the fees of the arbitrator(s) and related expenses of arbitration. Each of the Parties consents to the jurisdiction of any United States District Court in which the controversy may be heard for all purposes in connection with the arbitration with rights of appeal to the appropriate federal courts. If for any reason such United States District Court does not have or declines jurisdiction over the subject matter of the action, the Parties consent to the jurisdiction of the state courts of the State of Utah solely for the purpose of compelling or enforcing arbitration with rights of appeal to the appropriate courts. If for any reason both the federal courts and the state courts do not have or decline jurisdiction over the subject matter of the action, the Parties consent to the jurisdiction of the Court of Indian Offenses under 25 C.F.R. Part 11 (or its successor court) solely for purposes of compelling or enforcing arbitration with rights of appeal to the appropriate courts. The Parties consent that any process or notice of motion or other application to said court, and any paper in connection with arbitration, may be served by certified mail, return receipt requested, or by personal service, or in such other manner as may be permissible under the rules of the applicable court or arbitration tribunal, provided a reasonable time for appearance is allowed.

SECTION 28. SAFETY REVIEW COMMITTEE

The L.L.C. shall establish a Safety Review Committee if required by the License. It shall include one member of the Band. The purpose of this Safety Review Committee shall include making recommendations to the L.L.C. concerning the safe operation of the Facility.

SECTION 29. UNLAWFUL USE

The L.L.C. agrees not to use or cause to be used any part of the Leased Premises for any unlawful conduct or purpose.

SECTION 30. CONSENTS

The Band and the L.L.C. shall each not unreasonably withhold its consent to any requests for approvals, consents or other matters as may be requested from time to time by the other Party hereto in connection with this Lease and the terms and conditions herein set forth, and the Band and the L.L.C. shall cooperate with each other in obtaining any consents or approvals of the Secretary as may be required in connection with this Lease.

SECTION 31. ASSENT NOT WAIVER OF FUTURE BREACH OF COVENANTS

No assent, express or implied, to any breach of any of the L.L.C.'s or the Band's covenants shall be deemed to be a waiver of any succeeding breach of any covenants of such Party.

SECTION 32. INDEMNIFICATION; LIMITATION OF LIABILITY

Neither the Band nor its members, agents, representatives, and employees nor the United States shall be liable for any loss, damage, or injury of any kind whatsoever to the person or property of the L.L.C. or sublessees or any other person whomsoever, caused by the L.L.C.'s use of the Leased Premises, or by any defect in any structure erected thereon, or arising from any accident, fire, or other casualty on said premises or from any other cause whatsoever; and the L.L.C., as a material part of the consideration for this Lease, hereby waives on the L.L.C.'s behalf all claims against the Band and agrees to hold the Band free and harmless from liability for all claims for any loss, damage, or injury arising from the use of the Leased Premises by the L.L.C. where such claim is directly attributable to the actions of the L.L.C., its employees, agents or representatives, together with all costs and expenses in connection therewith; provided, however, that in the event the Band or its members, employees, agents or representatives contributed to the cause of the loss, damage or injury for which the Band is seeking to be indemnified, the Band shall bear its costs and losses arising out

of such claims in proportion to the degree to which the acts or omissions of the Band or its members, employees, agents or representatives shall have contributed to such loss.

Notwithstanding any provision in this Lease to the contrary, the L.L.C. shall not be liable to the Band, or its members, employees, agents or representatives, or to the United States in any instance for damages in any amount in excess of the amount of insurance the L.L.C. would be able to recover in such instance; provided, however, that the foregoing limitation of liability shall not apply to the extent such damages are caused by acts or omissions of the L.L.C. which constitute gross negligence or willful misconduct.

SECTION 33. OBLIGATIONS TO THE UNITED STATES

While the Leased Premises are in trust or restricted status, all the L.L.C.'s obligations under this Lease, and the obligations of its sureties, are to the United States as well as to the Band.

SECTION 34. RELINQUISHMENT OF SUPERVISION BY THE SECRETARY

Nothing contained in this Lease shall operate to delay or prevent a termination of Federal trust responsibilities with respect to the Leased Premises by the issuance of a fee patent or otherwise during the term of this Lease; however, such termination shall not serve to abrogate this Lease. The Band and the L.L.C. and its surety or sureties shall be notified by the Secretary of any such change in the status of the Leased Premises.

SECTION 35. REPRESENTATIONS AND WARRANTIES

A. Representations and Warranties of the Band. The Band hereby represents and warrants as follows:

(1) Enforceability; Binding Effect of Band's Obligations. This Lease, after execution and delivery by the Band and Secretary Approval, will be a valid and binding obligation of the Band, enforceable against the Band in accordance with its terms. [REDACTED]

[REDACTED] Neither the execution and delivery of this Lease nor the compliance by the Band with any of the provisions contained herein do or will (i) violate, or conflict with, the constitution or any other organizational or governing documents

of the Band in effect on the date of this Lease or (ii) violate, or conflict with, any order, writ, injunction, tribal or judicial decree, statute, rule, regulation or resolution applicable to the Band or any of the properties or assets of the Band.

(2) No Litigation. There is no litigation, administrative proceeding or other action against the Band existing, pending or threatened that would affect the ability of the Band to fulfill its obligations under this Lease.

B. Representations and Warranties of the L.L.C. The L.L.C. hereby represents and warrants as follows:

(1) Organization and Good Standing. The L.L.C. is a limited liability company duly organized, validly existing, and in good standing under the laws of the State of Delaware.

(2) Due Authorization; No Conflicts. The execution, delivery and performance by the L.L.C. of this Lease has been duly and effectively authorized by all necessary limited liability company action of the L.L.C., which authorization has not been modified or rescinded and is in full force and effect. No other proceedings or actions are necessary to authorize the execution and delivery of this Lease. This Lease, after execution and delivery by the L.L.C., will be a valid and binding obligation of the L.L.C., enforceable against the L.L.C. in accordance with its terms. Neither the execution and delivery of this Lease, nor the compliance by the L.L.C. with any of the provisions contained herein or therein do or will (i) violate, or conflict with, the Certification of Formation of the L.L.C. or the Limited Liability Company Agreement of the L.L.C. in effect on the date of this Lease or (ii) violate, or conflict with, any order, writ, injunction, judicial decree, statute, rule or regulation applicable to the L.L.C. or any of its properties or assets.

(3) No Litigation. There is no litigation, investigation, administrative proceeding or other action against the L.L.C. existing, pending or threatened that would affect the ability of the L.L.C. to fulfill its obligations under this Lease.

SECTION 36. MISCELLANEOUS

A. Parties' Good Faith Obligations. The Parties agree that they will in good faith undertake to fulfill their obligations in a timely manner and to execute and deliver such agreements, certificates and other documents as may be contemplated by this Lease or as may be required or necessary to be executed and delivered by them in connection with the development, construction, financing, ownership, operation, and decommissioning of the Facility.

B. Amendment. No amendment, modification or discharge of this Lease, and no waiver hereunder, shall be valid or binding unless set forth in writing and duly executed by the Party against whom enforcement of the amendment, modification, discharge or waiver is sought, subject to any necessary Secretary Approval.

C. Entire Agreement. This Lease (including Exhibits and Attachments hereto) constitutes the entire agreement among the Parties with respect to the transactions contemplated herein, and this Lease supersedes all prior oral or written agreements, commitments or understandings with respect to the matters provided for herein.

D. Headings. Article, Section and subsection headings contained in this Lease are inserted for convenience of reference only, shall not be deemed to be a part of this Lease for any purpose, and shall not in any way define or affect the meaning, construction or scope of any of the provisions hereof.

E. No Partnership. No agency, partnership, joint venture or other representative or fiduciary relationship between the Parties is created by, or may be implied by or inferred from, the execution of this Lease, the conduct of the Parties' activities as contemplated hereby, or the consummation of the transactions contemplated hereby.

F. Construction. In all cases the language in all parts of this Lease shall be construed simply according to its fair meaning and not strictly for or against any Party. Wherever any words are used herein in the masculine gender, they shall be construed as though they were also in the feminine and neuter genders in all cases where such would so apply, and wherever any words are used in the singular form they shall be construed as though they were also used in the plural form where such would properly apply.

G. Counterparts. This Lease may be executed in any number of counterparts, each of which when so executed and delivered shall for all purposes be deemed to be an original, but such counterparts of which this shall be one shall together constitute but one and the same instrument.

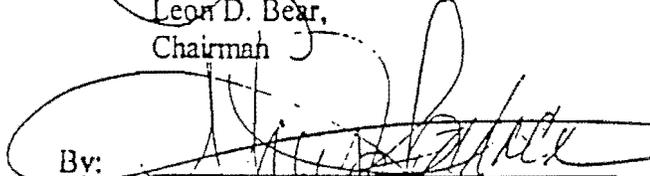
H. Governing Law. Unless otherwise provided herein, this Lease shall be construed, interpreted and enforced and governed by the provisions of 25 U.S.C. §§ 81 and 415, 25 C.F.R. Part 162 and other applicable federal law. The foregoing notwithstanding, to the extent that there is no federal law governing in a particular instance this Lease shall be construed, interpreted and enforced and governed by the applicable laws of the State of Utah or in the event a federal court determines that federal law does not govern the subject matter or is inadequate to assure the prompt and effective exercise of the rights and remedies of the L.L.C. and the Band hereunder with respect to provisions of this Lease, the law of the State of Utah shall be applied to the exercise of the rights and remedies of L.L.C. and the Band. The Band hereby consents to the application of the law of the State of Utah under such circumstances.

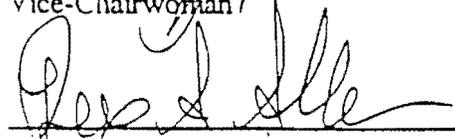
IN WITNESS WHEREOF, the Parties have hereunto set their hands.

LESSOR:

SKULL VALLEY BAND
OF THE GOSHUTE INDIANS

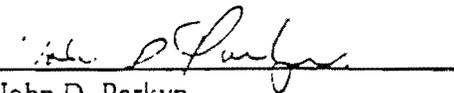
By: 
Leon D. Bear,
Chairman

By: 
Mary J. Apadaca,
Vice-Chairwoman

By: 
Rex A. Allen,
Secretary

LESSEE:

PRIVATE FUEL STORAGE, L.L.C.

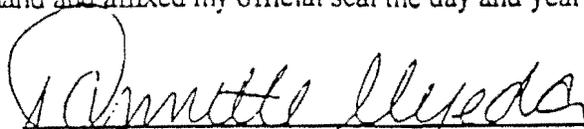
By: 
John D. Parkyn,
Chairman of the Board

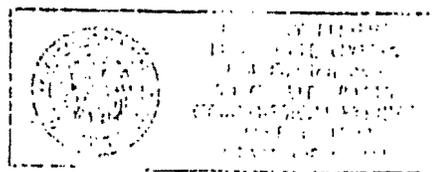
State of Utah)
) ss.
County of Salt Lake)

On this 20 day of May in the year 1997 before me Dannette Uyeda a Notary Public of said State, duly commissioned and sworn, personally appeared Leon D. Bear, personally known to me to be the person who executed this instrument as Chairman of the Skull Valley Band of the Goshute Indians and acknowledged before me that the Skull Valley Band of the Goshute Indians executed the same.

On this 20 day of May in the year 1997 before me Dannette Uyeda, a Notary Public of said State, duly commissioned and sworn, personally appeared John D. Parkyn, personally known to me to be the person who executed the within instrument as Chairman of the Board of Private Fuel Storage, L.L.C., and acknowledged before me that such limited liability company executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.


Notary Public in and for said State



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

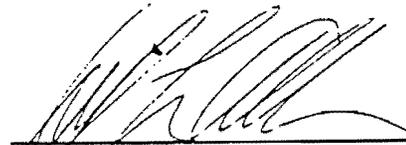
APPROVAL OF LEASE

The within Lease between Private Fuel Storage, L.L.C. (the "L.L.C.") and the Skull Valley Band of the Goshute Indians (the "Band") consisting of pages 1 through 35 and Exhibits "A" through "D" and Attachment I is hereby approved on behalf of the Secretary of the Interior pursuant to the provisions of the Act of August 9, 1955 (69 Stat. 539; 25 U.S.C. § 415), as amended, and as supplemented by the regulations (25 C.F.R. Part 162).

In accordance with the authority vested in me, including without limitation my power set forth in 25 C.F.R. § 1.2 to waive and make exceptions to my regulations, I hereby specifically waive and make exceptions to the application of any of the regulations of the Department of the Interior with regard to any provision of this Lease which is inconsistent with any of such regulations, and I find that this waiver and exception is permitted by law and is in the best interests of the Skull Valley Band of the Goshute Indians.

Dated: May 23, 1997

By:



David L. Allison, Superintendent
United States Department of the Interior
Bureau of Indian Affairs

EXHIBIT "A"
TO THE BUSINESS LEASE

Facility Site

One parcel of land located in Sections 5, 6, 7, and 8, Township 5 South, Range 8 West, Salt Lake Base and Meridian described as follows: All of Section 6, the north 700 feet of Section 7 from the west to the east Section 7 boundary, the west 700 feet of Section 5 from the north to the south Section 5 boundary, and the north 700 feet of Section 8 from the west Section 8 boundary to a point 700 feet east. Containing 820 acres more or less.

EXHIBIT "B"
TO THE BUSINESS LEASE

Easements and Rights-of-Way

An east-west access corridor between the Facility Site as described on Exhibit "A" to the Business Lease and the West Right-of-Way of Skull Valley Road to permit construction and maintenance of transportation access and utilities to service the Facility Site; portions thereof located in Sections 8 and 9; Township 5 South; Range 8 West; Salt Lake Base and Meridian described as follows: the north 1,000 feet of Section 8 from the Facility Site east boundary to the east Section 8 boundary, the north 1,000 feet of Section 9 from the west Section 9 boundary to the West Right-of-Way of Skull Valley Road. Containing 202 acres more or less.

EXHIBIT "C"
TO THE BUSINESS LEASE

Buffer Zone

A buffer zone to include the remaining portions of Sections 5, 7, and 8 and all of Sections 17 and 18. Township 5 South. Range 8 West, Salt Lake Base and Meridian.

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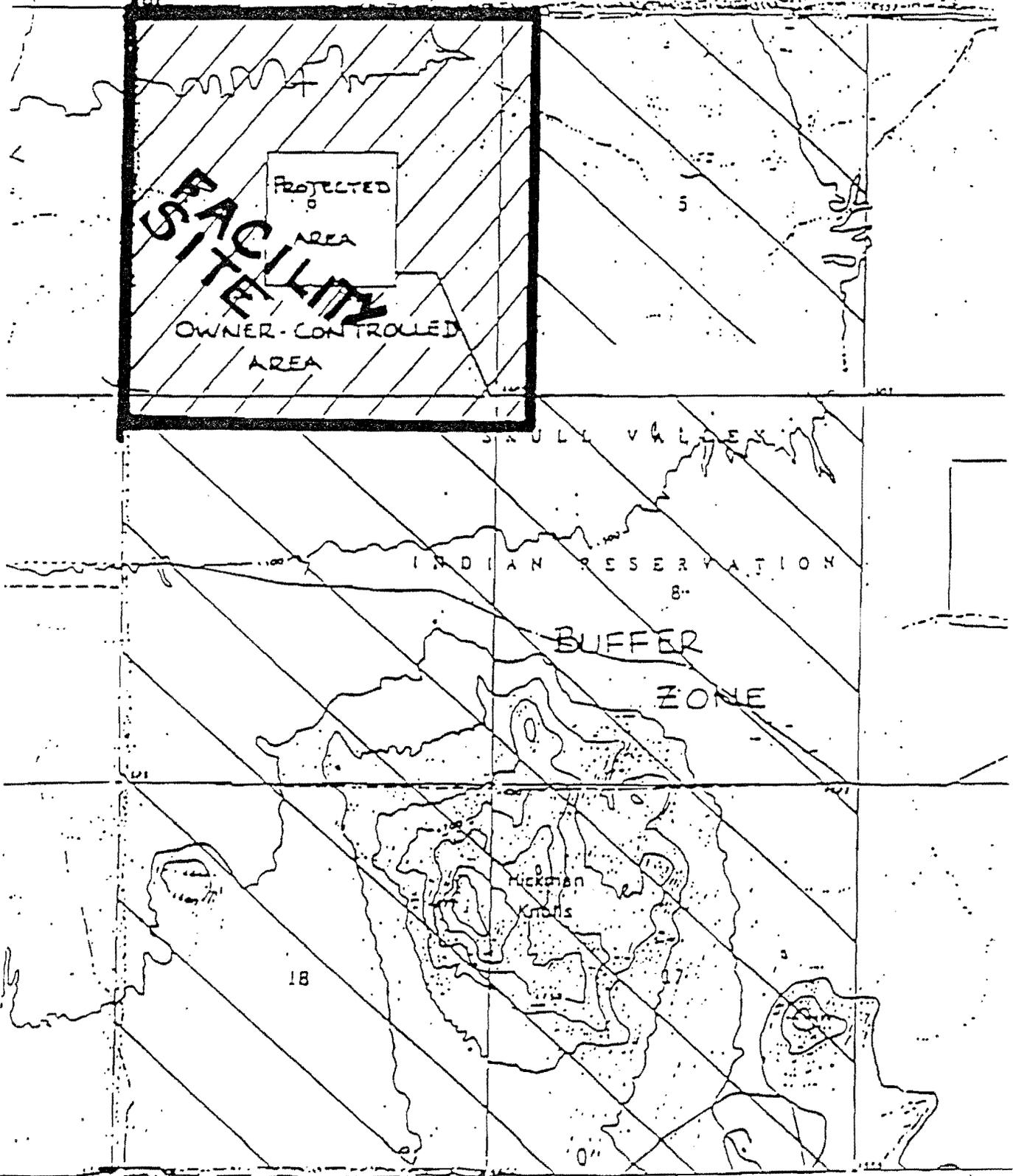


EXHIBIT "E"
TO THE BUSINESS LEASE

Annual Expense Escalators

[REDACTED]

[REDACTED]

ATTACHMENT "I"
TO THE BUSINESS LEASE

Valid Existing Leases, Easements, Rights-of-Way
and/or Other Encumbrances and/or Restrictions

1. Lease dated April 27, 1984, by and between Hercules, Incorporated and the Band; as amended by (i) Amendment No. 1 dated December 1, 1985, by and between Hercules, Incorporated and the Band; (ii) Amendment No. 2 dated November 1, 1989, by and between Hercules, Incorporated and the Band; (iii) the Skull Valley Band of Goshute Indians Possessory Interest Tax Settlement Agreement, dated April 29, 1994, by and between Hercules, Incorporated and the Band; and assigned to Alliant Techsystems Inc. pursuant to that certain Assignment and Assumption Agreement dated March 15, 1995, between Hercules Incorporated and Alliant Techsystems Inc (collectively the "Alliant Lease").

2. ASSIGNMENT OF TRUST DEED

Assignor: Skull Valley Band of the Goshute Indians
Assignee: First Security Bank of Utah, N.A.
Dated: April 27, 1984
Recorded: July 5, 1984
Entry No.: 362803
Book/Page: 221/443-451

As to Sections 17 and 18, both in T5S, R8W, Salt Lake Base & Meridian

3. TRUST DEED

Trustor: Alliant Techsystems Inc.
Trustee: Lawyers Title Insurance Corporation
Beneficiary: J. P. Morgan Delaware, as Collateral Agent for the Secured Parties
Dated: March 15, 1995
Recorded: March 15, 1995
Entry No.: 072609
Book/Page: 392/8-77

As to Sections 17 and 18, both in T5S, R8W, Salt Lake Base & Meridian

4. UCC-1

Debtor: Alliant Techsystems Inc.
Secured Party: J. P. Morgan Delaware as Collateral Agent
Recorded: March 15, 1995
Entry No.: 072610
Book/Page: 392/78-105

As to Sections 17 and 18, both in T5S, R8W, Salt Lake Base & Meridian

5. The Leased Premises are situated within the boundaries of the Tooele County Hospital Special Services District.

EXHIBIT 14

Gregg E. Simonds
139 East South Temple, Suite 310
Salt Lake City, Utah 84111

January 16, 1998

Bryan T. Allen
Parr, Waddoups, Gee, Brown & Loveless
185 South State Street
Suite 1300
Salt Lake City, Utah 84111

Dear Mr. Allen:

I am writing at the request of Castle Rock Land & Livestock, L.C. and Skull Valley Co., Ltd (collectively, "Castle Rock"). I am the Vice President of Agricultural Operations for the Ensign Group, which is affiliated with, and participates in the management of certain ranches owned by Castle Rock. Attached please find a copy of my resume detailing my qualifications, including my masters degree in Range and Watershed Management and more than twenty years experience as a ranch manger and consultant.

I am writing with regard to the application (the "Application") of Private Fuel Storage, L.L.C. ("PFS") to construct a private fuel storage facility ("PFSF") on the Skull Valley Goshute Indian Reservation ("Goshute Reservation") for the storage of spent nuclear fuel. Castle Rock owns approximately 67,000 acres of land (the "Ranchland") next to the Goshute Reservation. The present uses of the Ranchland included grazing cattle, raising horses, and residential uses. Based on my experience as the director and operator of numerous ranching operations throughout the Western United States and familiarity with the basic elements of the proposed PFSF, I am of the opinion that construction and operation of the PFSF would significantly reduce the usefulness and value of the Ranchland for agriculture operations. This opinion is based in part on my observation that there is heightened public concern about food safety, especially with regard to beef. Accordingly, producers, feeders, packers, and retailers are now establishing alliances to "source verify" beef so that the efficacy and safety of production is insured. The market for "source verified" beef is growing, as is the sophistication of the source verification process. Beef produced in an open, free ranging, wilderness-like environment is perceived to be cleaner, safer, and more valuable to the buying public. Construction and operation of the PFSF will inhibit, if not eliminate, Castle Rock's ability to market beef raised on the Ranchland as being "clean" range beef. This will keep Castle Rock from being a part of the developing alliances and from realizing the premiums that beef marketed through such alliances will command.

In addition, to the extent that groundwater on the Ranchland is contaminated as a result of the construction, operation, or decommissioning of the PFSF, the land will become generally

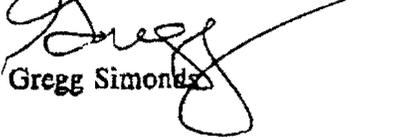
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Bryan T. Allen
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unsuitable for ranching or farming operations. Furthermore, I believe that dust, noise, and an increased risk of accidents resulting from the increase in heavy-load traffic on the Skull Valley Road associated with the construction and operation of the PFSF will diminish the usefulness of the Ranchland for ranching or farming operations.

Please feel free to contact me with any follow up question or requests for formal testimony.

Sincerely



Gregg Simonds

Gregg E. Simonds

Education:

B.S., Utah State University, Range and Watershed Management, 1976.

M.S., Utah State University, Range and Watershed Management, 1980.

Experience:

- 1974-1994: Gregg has been consulting and/or managing ranches in the Intermountain area since 1974 when he was appointed manager of Deseret Land & Livestock, a 200,000 deeded acre ranch in Utah. Under Gregg's guidance, Deseret Land & Livestock has become a national role-model as an efficient and highly profitable ranching operation that is sensitive to caring for the land.
- 1979: Gregg and other team members wrote a resource management plan for Bolivia as part of a U.S. Agency for International Development project. In 1980 he had his master's thesis: *Impact of Crop Production and Intermountain Cattle Ranch Efficiency*, accepted at Utah State University.
- 1994-1996: Most recently Gregg has been a regional manager for Deseret Intermountain Ranches. These four ranches in Utah, Wyoming and Montana encompass over 600,000 deeded and federal acres. These ranches have active cattle operations and wildlife/recreation programs. Deseret Intermountain Ranches is a division of Farm Management Company, the largest producer of cattle in the United States.
- 1996-Present: Gregg is currently the Vice President of Agricultural Operations for The Ensign Group. Gregg is also an adjunct professor in the agricultural department at Colorado State University.

Awards/Activities: Gregg has chaired a number of land management and habitat restoration committees. He was named the Utah Society of Range Management's "Rancher-of-the-Year" in 1986, received the President's "Take Pride in America", National Stewardships Award in 1989, the Department of the Interior National Stewardship Award in 1990, Land Manager of the Year by the Wyoming Wildlife Federation in 1994, and the Wyoming Bureau of Land Management Stewardship Award in 1995. Gregg has spoken widely on issues of responsible land practices, wildlife management, and profitable ranching.

Gregg spends his free time hiking, biking, fishing, and skiing with his wife and three children

EXHIBIT 15

Christopher F. Robinson

*1786 E. 900 South
Salt Lake City, Utah 84108
Tel: (801)581-9626*

January 16, 1998

Bryan T. Allen, Esq.
Parr, Waddoups, Gee, Brown, and Loveless
185 South State Street, Suite 1300
Salt Lake City, Utah 84111

Re: Skull Valley Land

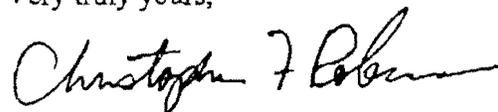
Dear Mr. Allen,

At your request, I have investigated the possible reduction of value of the 67,000 acres of land owned by Castle Rock Land and Livestock and Skull Valley Company located in Skull Valley (the "Skull Valley Land"), adjacent to the Goshute Indian Reservation. As evidenced by my attached resume, I have considerable experience in the buying, selling, and development of real property. It is my view, that the location of a nuclear storage facility adjacent to the Skull Valley Land will result in a significant diminution of value to these lands.

Skull Valley is a remote and beautiful place and this is part of its attraction. With the disruption and damage caused by construction, dust, increased traffic, public perception of danger, and actual danger caused by potential accidents related to the storage facility, the Skull Valley Land will no longer be attractive to developers and buyers interested in residential and commercial development. The land will be damaged and you will suffer significant economic harm.

In order to further understand this issue, I have discussed the matter with both Raymond S. Fletcher and Wallace W. Myers, two expert and certified appraisers (see attached qualifications and resumes). It is the view of both of these experts, that the location of the proposed nuclear storage facility adjacent to the Skull Valley Land will cause significant damage to the land and its economic value and opportunities. Due to the short time frame you are operating under, they are unable to complete an appraisal relating to this issue, but will be happy to do so in the future should the need arise.

Very truly yours,



Christopher F. Robinson

Enclosures

01/10/98 FRI 14:02 FAX 801 328 1616 THE ENGLISH GROUP

Christopher F. Robinson

RESUME

Education:

Honors B.A., University of Utah, Accountancy (and the equivalent of a minor in Spanish), 1986.

Experience:

1986-Present: Owner and Officer of several businesses principally owned or controlled by him and his brother and sister, principally in the fields of production agriculture (farming and beef cattle ranching), real estate (residential, recreational, and agricultural), investments (securities, startup companies, and venture lending), composite materials (filament wound and injection molded), and equipment manufacturing (filament winding). Chris has an extensive background in financial, investment, and tax matters.

1994-Present: Member of the Board of Directors of HealthRider, Inc.

1996: Chief Executive Officer and President of HealthRider, Inc., a \$250 Million a year, 1400 employee exercise equipment company. Instrumental in financial and personnel restructuring of the company and the subsequent sale of the company in August 1996 to Icon Health and Fitness.

Member of the Rotary Club of Salt Lake (Club 24) and the Alta Club (a prominent local business club)

Board of Director for the Utah Nature Conservancy.

Chris is an avid fly fisherman, is very involved in his church and loves the outdoors.

DEVELOPMENT EXPERIENCE OF CHRISTOPHER F. ROBINSON

Companies managed by Christopher F. Robinson have over 10 years of experience of developing land in subdivided and improved lots in the state of Utah. In the past few years, Chris, through his affiliated companies, has bought and sold more than \$60 Million of real estate.

A partial list of development projects includes the following:

A. Residential Developments:

North Cove Estates: 40 one to two acre lots in a gated private community located in Salt Lake City above the Utah State Capitol Building. North Cove Estates has become one of the premier developments in Salt Lake City with building lots selling for prices in excess of \$400,000. One lot remains in inventory. Responsible for entire development of lots, including obtaining city

approvals, installing and designing infrastructure, and marketing.

Capitol Hills Estates: 65 third to half acre lots located minutes from downtown Salt Lake City with prices ranging from \$125,000 to \$185,000. All lots have been sold. Responsible for entire development of lots, including obtaining city approvals, installing and designing infrastructure, and marketing.

Dorchester Pointe, P.U.D.: 40 lots located west of Ensign Peak in Salt Lake City. Plats were recorded in the Spring of 1997. Currently completing the infrastructure and marketing the lots. Lot prices range from \$110,000 to \$240,000 and approximately 50% of the lots have been sold.

Lake Point Project: Development plans currently being finalized for an approximately 4,500 acre project in the Lake Point area of Tooele County, including approximately 2,500 homes, 100 acres of commercial property, and a 700 industrial park.

B. Recreational Developments

Two Bear Ranch: Original developer of the Two Bear Ranch project located in the Uinta Mountains of Utah (in Summit County approximately 60 miles from Park City and Deer Valley). Began marketing of 38 lots located on 38,000 acres of land. Lots consisted of approximately 640 acres and were priced for approximately \$1,000,000 each. After obtaining 28 reservations in two weeks of pre-marketing, one of the excited reservation holders offered to, and eventually did, purchase the entire property.

Bear River Ranch: Currently in the process of obtaining subdivision approval from Summit County, Utah to place 24 lots on approximately 2,400 acres. The building envelope and fee title area of each lot will consist of approximately 10 acres with the remaining 2,100 acres to be common open space. This open space will consist of developed and undeveloped equestrian, hiking, and biking trails, fishing corridors, and other similar amenities. Property is vegetated with Lodgepole Pine and Quaking Aspen and contains numerous lakes and over one mile of frontage on the Bear River. Located approximately 90 minutes from Salt Lake City along Utah Scenic Byway Highway 150 and bordering the 2.6 Million acre Wasatch-Cache and Ashley National Forests. Lot prices are expected to be from \$350,000 to \$500,000.

C. Commercial/Industrial Development

Legacy Business Park: The Legacy Business Park is a master planed mixed use

commercial and industrial development to be located on approximately 460 acres in the city of North Salt Lake. Chris, in conjunction with his affiliate Center Street Company, L.C. and Barlow Nielsen Associates, is in the process of obtaining final approval for this business park. The park sits adjacent to the proposed Legacy Highway which is intended to become a major north-south highway along the Wasatch Front.

Northwood Business Center: This 45 acre business park is located in North Salt Lake and is currently selling one to five acre commercial/light industrial building lots. Improvements were completed during the Summer of 1997 and approximately 30% of the lots have been sold.

APPRAISER'S QUALIFICATIONS AND RESUME

Name: Raymond S. Fletcher, MAI

Address: 2420 Wilshire Drive
Salt Lake City, Utah

Telephone: (801) 485-1077

Education: MBA Degree — Harvard Graduate School of Business Administration
BS Degree — University of Utah
High School Diploma — Salt Lake City Public Schools

Business Experience: President: Fletcher-Lucas Investment Company.
The company was established in 1923 and I have been active in the brokerage, selling, financing and appraising phases of the business since 1946.

Professional Affiliations: Member: Appraisal Institute with the MAI Designation.
Awarded Life Member status December 10, 1991.
Past President of the Utah Chapter.

Past Broker Member and Director: Salt Lake Board of Realtors.

Utah State Certified General Appraiser

Appraisal Experience: Continuous fee appraisal activities since 1954 including properties located in Utah, California, Idaho, Nevada, Wyoming, Montana and New Mexico.

Qualified as an Expert Witness in District and Federal Courts in Utah.

During the past 40 years, I have appraised all types of property including land, residences, multiple residences, condominiums, commercial and industrial properties.

Past clients include almost all banks and mortgage companies in Salt Lake City as well as major oil companies, local and national corporations, numerous estates, several law firms and individual investors. Public entities served include Salt Lake City Corporation and its Redevelopment Agency, Salt Lake County Water Conservancy District, Utah Department of Social Services, University of Utah and West Valley City.

TYPICAL RECENT APPRAISAL ASSIGNMENTS

<u>Type of Property</u>	<u>Client</u>
Commercial Land and Building	D&RGW Railroad
72-unit Apartment	Washington Federal Savings
Distribution Warehouses	First Interstate Trust
Firestone Tire Store & Restaurant	Owner
Engineering and Research Office	Law Firm
Nursing and Rehabilitation Center	Owner
Mulligan's Golf & Games	Owner and Lender
Utah State Bar Office Building	State Bar Association
First Congregational Church	West One Bank
Serta Mattress Factory	West One Bank
No. 1 Fire Station Site	Salt Lake City Corporation
K-mart Store	Investor
Suburban Office Building	Owner
Office Building	RDA of Salt Lake City
Radisson Hotel	RTC Manager
Silver Creek Business Center	National City Bank, Minnesota
Water Line Easements	S. L. County Conservancy Dist.
Blanchard Metals Manufacturing	Owner
Immanuel Christian Church	Church
Beehive Credit Union Offices	Credit Union
Taylor Electric Office & Warehouse	Taylor Electric
Howe Rents (Commercial Rentals)	Owners
Texaco Gas & Wash	Lender and SBA
Fiesta Fun Golf & Rides, St. George	Capital City Bank and SBA
Alta Club (Private Club)	Members
Hamilton Tennis Club	Leucadia Corporation
Carleson Cadillac	RDA of Salt Lake City
Industrial Land, Magna, Utah	Southern Pacific Railroad
Four Large Commercial Properties	RDA of Salt Lake City
Brigham Street Inn	Owner and Lender
Bailey Firestone	West One Trust
Camera Den Store	First Interstate Trust
Research Park Land, University of Utah	University of Utah
Suburban Land	Utah Parks and Recreation
Hill Farm	Jones Waldo Law Firm
Novell Office Complex, Provo, Utah	Owners
WordPerfect Office Complex, Orem, Utah	Owners
Sweet Candy Factory	Owners
Motor Cargo Freight Terminal	Owners

QUALIFICATIONS OF WALLACE W. MYERS

Life-long resident of Salt Lake City, excepting periods during LDS mission and military service.

PRESENT POSITION -

Independent Fee Appraiser

MILITARY AND APPRAISAL EXPERIENCE -

Vietnam Veteran (1969 -1970)

Staff Appraiser for Western Savings & Loan, February 1972 to June 1974

Independent Fee Appraiser associated with Werner Kiepe and William L. Christensen June 1974 to April 1976

EDUCATION -

Salt Lake City Public Schools, graduating from East High School (1963)

Undergraduate and Graduate studies, University of Utah B.A., Marketing, 1968 -- M.B.A., 1971

Credited with the following courses:

Society of Real Estate Appraisers

Course 101 An Introduction to Appraising Real Property

Course 201 Principles of Income Property Appraising

Course 301 Special Applications of Appraisal Analysis

American Institute of Real Estate Appraisers

Course II Urban Properties Appraisal Application

Course IV Investment Analysis

BROKER'S LICENSE -

Active Utah Broker's License

MEMBERSHIPS/ASSOCIATIONS -

Member of the American Institute of Real Estate Appraisers MAI Designation, #5985. Now Appraisal Institute.

SERVICE ACTIVITIES

Society of Real Estate Appraisers, Chapter #41

Director, 1975 - 1979

Treasurer, 1979 - 1980

Young Advisory Council in Denver, Colorado, 1980

American Institute of Real Estate Appraisers, Chapter #28

Candidate's Guidance Chairman, 1979 - 1980
Admission Chairman, 1981 - 1982
Chapter President, 1983
Southwest Regional Conference Chairman, 1986

Board Member - Utah Association of Appraisers - 1991

Board Member - Utah Appraiser Registration and Certification Board - 1992-1995

CLIENTS - (A partial list)

Lenders

Bonneville Mortgage
Cal Fed Savings and Loan
Western Mortgage
Key Bank
United Savings

Attorneys

Spencer Snow
Thomas Crowther
Ken Cannon

PRIVATE CORPORATIONS

Machan Hampshire Properties
Wallace Associates
Terra Industries
Alder Construction

TYPES OF PROPERTIES APPRAISED

PUD

Warehouses
Industrial
Shopping Centers
Retail Outlets
Condominium Projects
Special Purpose Properties
Apartments
Office Buildings