

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:

) Docket No. 72-22-ISFSI
)

PRIVATE FUEL STORAGE, LLC
(Independent Spent Fuel
Storage Installation)

) ASLBP No. 97-732-02-ISFSI
)

) June 23, 1999
)

STATE OF UTAH'S REQUEST FOR ADMISSION OF
LATE-FILED AMENDED UTAH CONTENTION C¹

Introduction

Pursuant to 10 C.F.R. § 2.714, the State of Utah hereby seeks the admission of late-filed Amended Contention C, which challenges the adequacy of the Applicant's revised design basis accident dose calculations. These revised calculations were incorporated into the Applicant's license application by a May 19, 1999, revision to the Safety Analysis Report ("SAR") for the Private Fuel Storage Facility ("PFSF"). As discussed below, Amended Contention C satisfies the Commission's criteria for admission of late-filed contentions.

Procedural Background

The State's original contention C was admitted by the Licensing Board in LBP-98-7, 47 NRC 142, 185-86, *aff'd on other grounds*, CLI-98-13, 48 NRC 26 (1998). The

¹ This amended contention is supported by the Declaration of Marvin Resnikoff, attached hereto as Exhibit 1.

Applicant subsequently moved for summary disposition, based on the fact that it had revised its dose calculations in a February 10, 1999, response to a Request for Additional Information ("RAI") from the NRC Staff, and therefore the concerns raised in Contention C were moot. Applicant's Motion for Summary Disposition of Utah Contention C (April 21, 1999). The State opposed the Motion on the ground that the contention was not moot, because the Applicant had not amended its license application to incorporate the revised dose calculations. State of Utah's Opposition to Applicant's Motion for Summary Disposition of Contention C (May 11, 1999). The Applicant subsequently amended the license application on May 19, 1999.

In a recent decision, the Licensing Board granted the Applicant's motion, holding that the amendment of the application had the effect of mooted the contention. LBP-99-23, Memorandum and Order (Granting Motion for Summary Disposition Regarding Contention Utah C) (June 17, 1999). In dismissing Contention C, the Board noted that nothing in its decision forecloses the State from filing a new contention challenging the new dose analysis, assuming the contention meets the admissibility and late-filing criteria. *Id.*, slip op. at 15.

The State has evaluated the Applicant's new dose analysis, and has concluded that it also is insufficient to satisfy the Commission's health and safety regulations. Accordingly, the State hereby submits Amended Contention C. The State recognizes that this is an amendment to a contention that has been dismissed, and thus has

resubmitted the contention in its entirety.

AMENDED CONTENTION C²: The Applicant has failed to demonstrate a reasonable assurance that the dose limits specified in 10 CFR § 72.106(b) can and will be complied with, in the following respects:

1. The Applicant relies on cask designs that have not been approved by the NRC.³
2. The Applicant has not demonstrated that the accident evaluated is a design basis or bounding event.
3. The Applicant makes unreasonable assumptions about the duration of the radiation dose.
4. The Applicant makes unreasonable assumptions about the length of time that a person outside the controlled area will be exposed.
5. The Applicant does not adequately evaluate the ingestion pathway dose.

BASIS: Pursuant to 10 CFR § 72.106, any individual located on or beyond the nearest boundary of the controlled area of an ISFSI may not receive a dose greater than 5 rem to the whole body or any organ from any design basis accident. NRC regulations at 10 CFR § 72.106(d) require the submission of analyses that demonstrate

² The State's motion for late-filed Amended Contention C is 10 pages or less. The State presumes that the Amended Contention itself is not subject to the 10 page limit imposed on general motions in this proceeding.

³ The State notes that it made the same argument with respect to the original license application, and that the argument was rejected in LBP-98-7. *Id.*, 47 NRC at 185-86. The State recognizes that the Board may reject this argument as well, but makes the argument here to preserve its rights on appeal.

compliance with this requirement. In addition, 10 CFR § 72.106(m) requires that an application for an ISFSI or MRS license must contain an "analysis of the potential dose equivalent or committed dose equivalent to an individual outside the controlled area from accidents or natural phenomena events that result in the release of radioactive material to the environment or direct radiation from the ISFSI or MRS." The dose calculations "must be performed for direct exposure, inhalation, and ingestion occurring as a result of the postulated design basis event." According to NRC regulations at 10 CFR § 72.3, "Design bases means that information that identifies the specific functions to be performed by a structure, system or component of a facility and the specific values or ranges of values chosen for controlling parameters as reference bounds for design." The American Nuclear Society's guidance for the design of ISFSIs, ANSI/ANS-57.9-1992, Design Criteria for an Independent Spent Fuel Storage Installation (Dry type), American Nuclear Society, (May 14, 1992) ("ANSI-57.9"), defines four classes of design basis events, ranging from Design Event I (events that "are expected to occur regularly or frequently in the course of normal operations") to Design Event IV (events "that are postulated because their consequences may result in the maximum potential impact on the immediate environs.") *Id.* at 2. The consideration of Design Event IV events establishes a "conservative design basis for certain systems that are important to confinement." *See also* NUREG-1567, Standard Review Plan for Spent Fuel Dry Storage (Draft) at 12-3 (October 1996), which defines

a design-basis accident as "the subset of all credible accidents that bound the entire spectrum of accidents that could occur in terms of the nature and consequences of accidents."

Contention C, as admitted by the Licensing Board in LBP-98-7, is based on the dose analysis in the Applicant's original license application. As explained in the basis of Contention C, the Applicant's dose analysis made inconsistent use of NUREG-1536, Draft Standard Review Plan for Dry Cask Storage Systems (Jan. 1997) ("NUREG-1536") and SAND80-2124, Transportation Accident Scenarios for Commercial Spent Fuel (Feb. 1981) ("SAND-80-2124"). It also failed to include any calculation of doses incurred by the ingestion pathway. State of Utah's Contentions at 19-20 (November 23, 1997).

In a recent license application amendment, the Applicant has incorporated new accident dose calculations that no longer rely on NUREG-1536 or SANDIA-80-2124. The new calculations also include an analysis of the ingestion pathway dose. Safety Analysis Report ("SAR"), Revision 3, Section 8.2.7, submitted by letter from John D. Parkyn, PFS, to Director, NRC Office of Nuclear Material Safety and Safeguards (May 19, 1999).

These new dose calculations were prepared by Dade Moeller & Associates, a consultant to PFS through Stone & Webster, in response to a December 18, 1998, Request for Additional Information ("RAI") by the NRC Staff. The calculations are

described in two reports, UR-010, "RESRAD Pathway Analysis Following Deposition of Radioactive Material From the Accident Plumes" (February 9, 1999) ("UR-010"); and UR-009, "Accident Dose Calculations at 500 m and 3219 m Downwind for Canister Leakage Under Hypothetical Accident Conditions for the Holtec MPC-68 and SNC TranStor Canisters" (February 9, 1999).

The RAI asked PFS to revise its calculations, using release fractions and methodology contained in a recently issued interim staff guidance document, Interim Staff Accident Dose Calculations Guidance-5 (October 6, 1998) ("ISG-5"). A copy of ISG-5 is attached hereto as Exhibit 2. ISG-5 suggests an alternative means of performing dose calculations, which does not rely on NUREG-1536 or SAND-80-2124. The alternative method is based on NUREG-1617, Draft Standard Review Plan for Transportation Packages for Spent Nuclear Fuel (March 1998). The new dose calculations submitted by PFS follow the guidance in ISG-5.

As discussed in more detail below, the new dose calculations in SAR Rev. 3 fail to demonstrate that offsite doses can be contained within acceptable limits. As a result, the amended application not only fails to satisfy 10 CFR §§ 72.106(b), 72.126(d), and 72.24(m), but also undermines the Applicant's basis for failing to require offsite emergency planning measures in the event of an accident. As discussed in the preamble to the Commission's 1986 proposed amendments to the Part 72 standards, the determination that "special offsite emergency preparedness" is not necessary for spent

fuel storage is based on the assumption that doses calculated to result from potential accidents are "far below" EPA protective action guides. 51 Fed. Reg. 19,106, 19,109 (May 27, 1986). Because this assumption appears to be invalid in the case of the proposed ISFSI, the need for offsite emergency planning must be considered.

The amended application is inadequate to satisfy NRC regulations and provide reasonable assurance that public health and safety will be protected in the following respects:

1. Application Deficient Because Not Based on Approved Cask Designs.

According to the Applicant, the design basis accident is based in part on the design of the Holtec-HI-STORM and Sierra Nuclear Corporation ("SNC") TranStor casks. See, e.g., SAR Rev. 3, Chapter 8, which references the HI-STORM and TranStor designs throughout. The designs for these casks have yet to be fully reviewed or approved by the NRC; thus, they provide an inadequate basis for the SAR.

2. Bounding nature of assumed accident unsupported

In its previous dose analysis, PFS assumed a design basis accident in which the canister lid was removed. SAR Rev. 1, § 8.2.7.2. This assumption was based on industry guidance ANSI-57.9. SAR Rev. 1 at 8.2-1. PFS also assumed that 100% of the cladding was grossly degraded. Based on NUREG-1536 and SAND-2124, PFS then made other assumptions regarding the release fraction from the spent fuel to the canister, the percentage of volatiles released from the canister, and the respirable

fraction released to the environment. The State challenged these assumptions in Contention C.

In the new calculations, PFS continues to assume that 100% of the cladding is grossly degraded. However, other assumptions have changed. PFS now assumes that all the particulates that are released to the environment are respirable. This is more conservative than the 5% respirable fraction that was assumed in the first dose analysis. However, instead of assuming removal of the canister lid in a design basis accident, PFS assumes only an extremely small leak "at the maximum rate permitted by the closure helium leakage test acceptance criteria," or 1.58 E-5 scc/sec . SAR Rev. 3, § 8.2.7.2.

As directed by ISG-5, PFS's assumption of a small leakage rate is based on Table 4-1 of NUREG-1617. The leak rates reported in NUREG-1617 are, in turn, based on NUREG/CR-6487, "Containment Analysis for Type B Packages Used to Transport Various Contents" (November 1996), which in turn is based on ANSI standard N14.5, "Leakage Tests on Packages for Shipment," Table 1 (February 1998).

The State takes issue with PFS's assumptions that the radiation releases assumed for a dose analysis for a transportation cask are bounding and conservative for a storage cask. First, PFS has provided no basis for departing from its previous assumption that the canister lid is removed in a bounding design basis accident. Accidents involving the removal of the canister lid can have consequences that exceed the consequences of a

slow leak. PFS has failed to justify the change to the new so-called "design basis accident." Nor has the NRC Staff explained the basis for its apparent abandonment of the assumption, which previously was stated in NUREG-1536. Removal of the canister lid, or a breach in the canister that is comparable in size, is credible because the impact of a jet engine or hanging bomb during military overflights of the PFSF could cause a breach in the canister(s). See Utah Contention K.

Second, the assumed leakage rate is not conservative because it is based on testing requirements for transportation casks. In other words, the leak rate assumed in NUREG-1617 is equivalent to the maximum leak rate that must be tested for when transportation casks are inspected. These inspections are conducted relatively frequently. For instance, Table 1 of ANSI standard N14.5 assumes that casks will be leak-tested periodically, before shipment and after maintenance and repair. Thus, the leak rate that must be tested for is based on empirical knowledge about the leak rate that can be expected from a transportation cask.

In contrast, the NRC has no comparable information about the leak rate from a storage cask, because storage casks are never tested for leakage after they are initially packed. The PFS facility has no provisions for testing helium leakage during storage and no provisions for repairing and maintaining casks and testing for leakage after repair and maintenance.

Third, the conditions to which a storage cask are subjected are quite different

from, and in addition to, the conditions to which a transportation cask is subjected. Storage canisters are first subjected to vibrations and jolts during transportation. The canisters are then placed within a concrete overpack and stored on the ISFSI pad for long periods of time, during which they are subject to the effects of heat, weathering, and the effects of constant pressure on the contents of the canisters. These conditions may have an effect on the vulnerability of storage canisters to leakage, to a degree that is not considered for transportation casks.

In effect, by using NUREG-1617 to evaluate leakage from storage casks, PFS and the NRC Staff are comparing apples to oranges. Because of the significant differences between (a) the characteristics of storage and transportation casks, (b) the information available about leakage from storage canisters and transportation casks, and (c) the differences in what is tested for between storage canisters and transportation casks, the NRC Staff has no basis for assuming in ISG-5 that the bounding leak rate from a transportation cask constitutes the bounding leak rate for a storage cask, and PFS has no basis for applying this new regulatory guidance.

Finally, the methodology employed in NUREG/CR-6487 may not apply for certain accidents to which the PFS facility is vulnerable. NUREG/CR-6487 calculates the leak hole diameter that corresponds to a regulatory-allowable release rate under accident conditions. This extremely small leak hole can easily be exceeded in accidents involving sabotage. An impact with a MILAN or TOW-2 hand held anti-tank device

can produce a leak hole larger than calculated in NUREG/CR-6487. Impact with a jet engine or a hanging bomb at 600 mph can also produce leak holes larger than estimated in NUREG/CR-6487. Thus, contrary to the regulations, PFS is not designing the facility to withstand a bounding design basis event.

3. Unreasonable Assumption of 30-day Release

Based on ISG-5, the Applicant's new accident dose calculations assume a 30-day release duration. SAR Rev. 3, § 8.2.7.3; ISG-5 at 1. Although ISG-5 does not reference any documented support for this assumption, it appears to be taken from the Topical Safety Analysis Report ("TSAR") for the HI-STORM storage cask. According to the TSAR, "[t]he accident event duration (30 days) is considered conservative as any accident condition of storage resulting in the failure of 100% of the stored fuel rods would be detected by the routine security and surveillance inspections and corrective actions would be completed prior to the end of this 30-day period." Holtec, HI-STORM TSAR, Rev. 5, Report HI-951312 at 7.3-6.

In order to ensure the termination of all radioactive releases within 30 days, "corrective actions" would have to include both the cessation of airborne releases and the clean-up of any gamma radiation deposited offsite. In other words, PFS's assumption of a 30-day release necessarily is based on the assumption that there are some kind of emergency response measures. However, no such offsite measures are included in PFS's license application. Accordingly, the assumption of a 30-day offsite

release is unreasonable.

4. Unreasonable Assumption that Person Outside Controlled Area Is Exposed for Less Than 365 Full Days Per Year.

There are 8,760 hours in a year. However, PFS assumes that a person at the boundary of the PFS facility is exposed for only 2,000 hours a year for each of the different exposure pathways: direct gamma from deposited radionuclides; direct gamma from the passing cloud; inhalation of gases, particulates and volatiles; food (milk, vegetation, meat) ingestion. SAR Rev. 3, § 8.2.7.3. PFS states that the assumption of 2,000 hours out of 8,760 accounts for "partial occupancy." *Id.* It appears that PFS is assuming that the person near the fence post is a worker (*i.e.*, exposed for 40 hours/week, 50 weeks/year).

This assumption is unsupported and unreasonable. The area beyond the fence line is outside the Applicant's control. PFS cannot dictate that only workers will be in the area, or that people will leave the area for a certain period each day. To be reasonably conservative, PFS must assume that people are present at the fence post day-long and year-round. Moreover, indigenous people, ranchers, farmers, and mothers with non-school age children, tend to stay on their land more than others. Therefore, PFS must assume that a person may be located at the fence post 24 hours a day, or 8,760 hours/year.

5. Inadequate Dose Pathway Analysis.

a. Unreasonable assumption re mixing radionuclides and soil. In the

analysis prepared by Dade Moeller & Associates and Stone & Webster for PFS, particulates are assumed to be deposited downwind. UR-009 at 4. This deposited radioactive material is then assumed to be mixed within the top 1 cm of soil. *Id.* at 6. The standard code RESRAD is then employed to calculate direct gamma, food ingestion and inhalation of resuspended particulates. SAR Rev. 3, § 8.2.7.3.

Moeller and Associates has no basis for assuming that radioactive material is mixed within the top centimeter of soil. There is no logical reason to believe this will happen. Rather than artificially assuming that radioactive material is mixed with soil, Moeller & Associates should have directly calculated a direct gamma dose from the surface density pCi/m². A method for making this calculation is provided in EPA Federal Guidance Report ("FGR") #12, which is referenced in ISG-5.⁴ Notably, Moeller & Associates uses FGR #12 for direct gamma doses from a passing cloud in UR-009 at 4. There is no rational basis for the inconsistency.

b. Unreasonable omission of chlorine-36. For the thyroid dose, PFS considers the presence of iodine-129, but ignores chlorine-36, which will also be present in irradiated fuel and significantly contribute to the thyroid and whole body doses. Oak Ridge National Laboratory, "Characteristics of Potential Repository Wastes," prepared for the Department of Energy, DOE/RW-0184-R1/V1, Table 1B.1; Gasteiger, R, "Pi-Rezyklisierung in Leichtwasserreaktoren...", "Gesellschaft für

⁴ According to ISG-5, the NRC Staff "accepts dose calculations using dose Conversion Factors from EPA Federal Guidance Reports 11 and 12 on an isotope specific basis."

Kernforschung M.B.H., KFK 2417, Table 5.0-5 (February 1977). Copies of relevant pages of these reports are attached to this contention as Exhibit 3. NUREG-1617 and NUREG/CR-6487 err in not including Cl-36, a very important contributor to thyroid and whole body dose. Cl-36 and iodine-129 are the most significant radionuclide contributors to a thyroid dose.

Satisfaction of Late Filed Factors:

The State meets the 10 CFR § 2.714(a) late filed factors for amending its contention.

Good Cause: First, the State has good cause for the late filing. The State received a copy of the Applicant's license application amendment on May 24, 1999. The amended contention is being filed within 30 days of receiving the license amendment application. Thirty days is a reasonable time in which to evaluate the new material and file an amended contention, especially considering the fact that during that period, the State's attorneys and experts had numerous other obligations connected with this proceeding, including the taking and defending of several depositions; preparing written discovery and responses to written discovery; responding to the Board's June 2, 1999 Memorandum and Order questioning the significance of the May 19, 1999, license application amendment, and preparing responses to several motions for summary disposition.

In its summary disposition motion on Contention C, the Applicant argued that the State should have filed an amended contention when it received the revised dose calculations contained in the Applicant's February 10, 1999, response to the RAI. *Id.* at 19. This argument is based on a misreading of the NRC's regulations and precedents governing the filing of contentions, which unequivocally require that disputes with the license applicant focus on the "application," not on extraneous documents. 10 C.F.R. § 2.714(b)(2). As the Commission has stressed, under its "longstanding practice," contentions "must rest on the *license application*, not on NRC Staff reviews." *Baltimore Gas and Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 NRC 325, 349 (1998) (emphasis in original). The Licensing Board also made this quite clear in LBP-98-7, by holding that "a contention that fails to directly controvert the license application at issue . . . is subject to dismissal." *Id.*, 47 NRC at 181. *See also, Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1048-49(1983) (the SAR is "the central document for the formulation of safety contentions") .

In contrast to the license application, RAI correspondence constitutes merely an "ongoing staff dialogue" with the licensee. *Duke Energy Corporation* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, slip op. at 10 (April 15, 1999). Just as an RAI does not reflect "any ultimate staff determinations," *id.*, so an Applicant's answers do not represent ultimate determinations by the licensee, *i.e.*, amendments to the license

application.

In arguing that the RAI response somehow triggered the State's obligation to amend Contention C, the Applicant cited the Commission's holding in *Catawba*, that the institutional unavailability of a document does not, by itself, constitute good cause for a late-filed contention, if the intervenors could have uncovered the information earlier. Applicant's Motion for Summary Disposition at 19, citing 17 NRC at 1045. The Applicant confuses the obligation to raise new information that calls the adequacy of the application into question, with the obligation to challenge the application itself. At the time the RAI response was filed, the application contained the same language that the State had originally challenged in Contention C. Nothing about the application had changed. Thus, the State was entitled to rely on its duly admitted contention, which challenges the application as written. The Commission's holding in *Catawba* cannot be extrapolated into a requirement that an intervenor must modify an admitted contention that is based on an SAR, just because there is some correspondence indicating that the applicant may change the SAR in the future. Nowhere in *Catawba* does the Commission retract or modify its holding that "the FSAR is the central document for the formulation of safety contentions." 17 NRC at 1048-49. Thus, prior to the filing of the license application amendment on May 24, 1999, the State had no reason to amend its contention.

Moreover, based on PFS's previous practice, the State had no reason to believe

that PFS intended to amend the application when it filed the RAI response. PFS's previous behavior indicated to the State that it recognized the need to amend the application if it wished to change it. For example, on August 28, 1998, the Applicant submitted a license application amendment regarding the substitution of the Low Rail corridor for the Rowley Junction Intermodal Transfer facility, which consisted of numerous change pages to the original application. Letter from John D. Parkyn, PFS, to Director, Office of Nuclear Material Safety and Safeguards.

PFS's previous practice of filing a license application amendment to signify its intent to change the application is also consistent with NRC Staff practice. It is the State's experience that the NRC generally requires that changes to a license application be reflected in change sheets showing the amendment to the application. This is necessary because once a license is issued, the license application generally becomes the blueprint for the details of what the license requires. If license applications could be amended merely by correspondence, it would be difficult to determine what exactly a license consists of once it is issued.

Thus, based on PFS and NRC practice, the State reasonably interpreted PFS's failure to include such an amendment to its license application with the February 10, 1999, correspondence, as a sign that the RAI responses were provisional, and not intended to replace the original license application.

Moreover, the State made reasonable use of the RAI responses it received in

mid-February, by propounding discovery to the Applicant and the Staff regarding the basis for the changes in both the dose calculations and the underlying NRC Staff Guidance. See State of Utah's First Set of Discovery Requests Directed to Applicant [Redacted Version] at 16-21 (April 9, 1999); State of Utah's First Set of Discovery Requests Directed to the NRC Staff at 16-22 (June 10, 1999).⁵ The State recognized at that time that PFS might eventually amend its license application to incorporate the new dose calculations, and therefore sought to maximize its understanding of the basis for the new calculations. However, in the absence of any amendment to the license application, the State was not required to anticipate, before the fact, that the license application actually would be amended.

To hold that mere correspondence can trigger the requirement to amend a properly pled and admitted contention that is based on the license application would be utterly inconsistent with NRC requirements and precedents. It would also be unfair and prejudicial to the State. A licensing proceeding must be conducted with procedural fairness and regularity, including clarity with respect to those events that trigger intervenor obligations. The State reasonably relied on long-established Commission precedent that the application itself is the focus of the hearing, and that

⁵ PFS has refused to provide the requested information. Applicant's Objections and Non-Proprietary Responses to States's First Requests for Discovery at 34-37 (April 21, 1999). The State filed a Motion to Compel, which was denied by the Licensing Board in LBP-99-23. *Id.*, slip op. at 15, note 5. Because the contention has been dismissed, the Staff has informed the State that it will not be responding to the State's discovery either.

changes to the application itself are the triggering events which require amendments to contentions. To hold that the State should have amended contention C when it received PFS's February 10, 1999, RAI response, would improperly and unfairly shift the long-established target for contentions, i.e., the license application.

Development of a Sound Record: The State's participation will assist in developing a sound record. The State's expert on Contention C, Dr. Marvin Resnikoff, will also testify regarding Amended Contention C. As an experienced expert in the field of high level radioactive waste disposal and its radiological effects, Dr. Resnikoff is highly qualified to discuss the issues raised in Contention C.

Availability of Other Means for Protecting The State's Interests: The State has no alternative means, other than this proceeding, for protecting its interest in an adequate dose assessment and protection of its citizens from excessive radiation doses.

Representation by Another Party: The State's position will not be represented by any other party, as there is no other party with a similar contention admitted to this proceeding.

Broadening of Issues or Delay of the Proceeding: The admission of this Amended Contention will not broaden the proceeding beyond the scope initially envisioned in LBP-98-7, because it simply would restore the litigation of the issue of the adequacy of the Applicant's dose estimates. The admission of Amended Contention C will not cause any overall delay in the proceeding. The State anticipates

that Amended Contention C would be placed in Group II, in order to allow sufficient time to complete discovery and conduct any additional rounds of summary disposition motions that the parties may wish to file. The addition of one more issue to Group II will not cause any delay in the schedule for this proceeding.

Conclusion

For the foregoing reasons, Amended Contention C is both admissible and meets the Commission's standard for late filed contentions. Accordingly, it should be admitted.

DATED this 23rd day of June, 1999.

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that a copy of STATE OF UTAH'S REQUEST FOR NOV 26 P4:32
ADMISSION OF LATE-FILED AMENDED UTAH CONTENTION ^{was served}
on the persons listed below by electronic mail (unless otherwise noted) with ^{RULEMAKING AND ADJUDICATIONS STAFF}
conforming copies by United States mail first class, this 23rd day of June, 1999:

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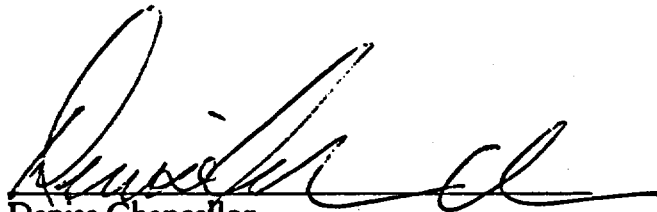
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A handwritten signature in black ink, appearing to read "Denise Chancellor", with a long horizontal flourish extending to the right.

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