

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kristine L. Svinicki, Chairman
Jeff Baran
Annie Caputo
David A. Wright
Christopher T. Hanson

In the Matter of

FirstEnergy Companies
and
TMI-2 Solutions, LLC

(Three Mile Island Nuclear Station
Unit 2)

Docket No. 50-320-LT

CLI-21-02

MEMORANDUM AND ORDER

This proceeding involves the November 12, 2019, application by GPU Nuclear, Inc., Metropolitan Edison Company, Jersey Central Power & Light Company, and Pennsylvania Electric Company (together, the FirstEnergy Companies) and TMI-2 Solutions, LLC (TMI-2 Solutions) (together with the FirstEnergy Companies, Applicants) to transfer the possession-only License for Three Mile Island Nuclear Station, Unit 2 (TMI-2) from the FirstEnergy Companies to TMI-2 Solutions.¹ Eric Epstein and Three Mile Island Alert, Inc. filing

¹ See Letter from John Sauger, President and Chief Nuclear Officer, TMI-2 Solutions, LLC and Gregory H. Halnon, President and Chief Nuclear Officer, GPU Nuclear, Inc., to NRC Document Control Desk (Nov. 12, 2019) (ADAMS accession no. ML19325C690 (package)) (together with attachments and enclosures, License Transfer Application).

jointly, (together, TMIA) filed a petition to intervene and a request for a hearing (Petition).² The Applicants oppose the Petition.³ The NRC Staff is not participating in this proceeding.

I. BACKGROUND

A. The License Transfer Application

In March 1979, after only four months' operation, TMI-2 experienced a partial meltdown and ceased operations.⁴ Between 1985 and 1990, 99% of the fuel was removed, and the reactor fuel and core debris were shipped to the Department of Energy's Idaho National Laboratory.⁵ Since that time the plant has been held in post-defueled monitored storage (PDMS). TMI-2 is adjacent to Three Mile Island, Unit 1 (TMI-1), which operated for more than forty-five years before it permanently shut down in September 2019.⁶ The two facilities are not owned by the same entities. A 2015 Post-Shutdown Decommissioning Activities Report

² *Petition of Eric Joseph Epstein and Three Mile Island Alert, Inc. for Leave to Intervene and for a Hearing* (Apr. 15, 2020) (Petition). The Commonwealth of Pennsylvania, Department of Environmental Protection petitioned to intervene but later withdrew its request after settling with the Applicants. See *Commonwealth of Pennsylvania, Department of Environmental Protection's Notice of Withdrawal of its Petition for Leave to Intervene and Request for an Extension of Time to File a Hearing Request* (Aug. 10, 2020).

³ See *Applicants' Answer Opposing Petition for Leave to Intervene and Hearing Request Filed by Eric Joseph Epstein and Three Mile Island Alert, Inc.* (May 11, 2020) (Answer to TMIA); see also *Reply of Eric Joseph Epstein and Three Mile Island Alert, Inc. to Applicant's Answer Opposing Petition for Leave to Intervene and Hearing Request* (May 18, 2020) (TMIA Reply).

⁴ See generally NRC Office of Public Affairs, Backgrounder, "Three Mile Island Accident" (ML040280573) (Backgrounder). See also Letter from Gregory H. Halnon, GPU Nuclear, Inc. to NRC Document Control Desk (Dec. 12, 2019), Attach. 1, "Post-Shutdown Decommissioning Activities Report," Three Mile Island Nuclear Power Station, Unit 2, NRC Possession Only License No. DPR-73, Rev. 3 (Dec. 2019), at 2 (ML20013E589 (package)) (PSDAR).

⁵ Backgrounder at 3-4.

⁶ See Letter from Michael P. Gallagher, Vice President, Exelon Generation Co., to NRC Document Control Desk (Sept. 26, 2019), at 1 (ML19269E480).

(PSDAR) for TMI-2 assumed that TMI-2 would be held in safe storage until 2041, or seven years after TMI-1 was expected to shut down in 2034.⁷

The application requests to transfer ownership of TMI-2 from the FirstEnergy Companies to TMI-2 Solutions. The transfer would allow TMI-2 to be decommissioned years ahead of the current projection.⁸ The application states that TMI-2 Solutions will initially maintain the site in PDMS for approximately four to five years while it completes preparatory work.⁹ According to the application, the proposed accelerated schedule would complete decommissioning approximately sixteen and a half years after the license transfer.¹⁰ But the application acknowledges that additional licensing actions must be taken before TMI-2 Solutions could commence dismantling the site.¹¹

TMI-2 Solutions is an indirect wholly owned subsidiary of EnergySolutions, Inc.¹² The proposed license transfer would take place pursuant to an Asset Purchase and Sale agreement (Purchase Agreement) entered among the Applicants on October 15, 2019.¹³

⁷ See Letter from Gregory H. Halnon, GPU Nuclear, Inc., to NRC Document Control Desk (Dec. 4, 2015), Attach. 1 at 12 (ML15338A222).

⁸ License Transfer Application, Attach. 1 at 2; *id.*, Encl. 7, “Schedule of Planned Decommissioning Activities,” at 1 (TMI-2 Solutions Decommissioning Schedule). The current Post-Shutdown Decommissioning Activities Report anticipates that decommissioning will be completed and the license terminated in 2053. See PSDAR at 4.

⁹ License Transfer Application, Attach. 1 at 2; *see also id.*, Encl. 7, TMI-2 Solutions Decommissioning Schedule, at 1.

¹⁰ License Transfer Application, cover letter at 3.

¹¹ *See, e.g., id.* at 2; *id.*, Attach. 1 at 2, 10; *id.*, Encl. 7, TMI-2 Solutions Decommissioning Schedule, at 1.

¹² *Id.*, cover letter at 2.

¹³ See License Transfer Application, Attach. 1, Encl. 1B, “Asset Purchase and Sale Agreement by and Among GPU Nuclear, Inc., Metropolitan Edison Company, Pennsylvania Electric

The application estimates that radiological decommissioning of TMI-2 by 2037 will cost \$1.06 billion (in 2019 dollars).¹⁴ The cost estimate for accelerated decommissioning was derived by using GPU Nuclear's 2018 Decommissioning Cost Estimate (DCE) and adjusting it based on TMI-2's expected methods, schedule, and past experience.¹⁵ The application states that, upon closing of the transfer, the funds in the TMI-2 nuclear decommissioning trust fund will be transferred to a tax-qualified nuclear decommissioning trust fund established by TMI-2 Solutions in an amount not less than \$800 million.¹⁶ In addition, TMI-2 Solutions will have access to "additional decommissioning funding assurance instruments worth up to \$100 million" and a Parent Guarantee from EnergySolutions.¹⁷ In December, 2019, the Applicants submitted an updated PSDAR, which included an updated DCE.¹⁸

Company, Jersey Central Power & Light Company, and TMI-2 Solutions, LLC" (Oct. 15, 2019) (Purchase Agreement).

¹⁴ License Transfer Application, Attach. 1 at 9.

¹⁵ See License Transfer Application, Attach. 1, Encl. 7, TMI-2 Solutions Decommissioning Schedule, at 5; see also Letter from Gregory H. Halnon, GPU Nuclear, to NRC Document Control Desk (Mar. 28, 2019), Encl. 1, "2018 Decommissioning Cost Estimate For FirstEnergy, Three Mile Island, Unit 2" (Dec. 12, 2018) (ML19087A153).

¹⁶ License Transfer Application, Attach. 1 at 2, 11; see also Purchase Agreement at 53, § 7.1.4.

¹⁷ License Transfer Application, Attach. 1 at 10-11. The "additional funding instruments" will consist of a "(i) a Back-Up & Provisional Nuclear Decommissioning Trust, segmented into a Back-Up Trust Account and a Provisional Trust Account; (ii) an Irrevocable Letter of Credit; (iii) an Irrevocable Disposal Capacity Easement; [and] (iv) a Financial Support Agreement." *Id.* at 11.

¹⁸ See PSDAR, Encl. 1A, "Decommissioning Cost Estimate."

TMI-2 Solutions plans to decommission the facility in two phases and to segregate the decommissioning funds into a “Phase I Subaccount” and a “Phase 2 Subaccount.”¹⁹ The application provides that if the Phase I Subaccount funds are exhausted before completion of the Phase I activities, TMI-2 Solutions will draw on the additional financial assurance instruments and the Parent Guarantee from EnergySolutions before drawing on the Phase 2 Subaccount.²⁰

The application anticipates that all Class A low-level radioactive waste (LLRW) will be disposed of pursuant to an “Irrevocable Disposal Capacity Easement” at the EnergySolutions LLRW disposal facility in Clive, Utah.²¹ In addition, the DCEs include the costs for recovering and packaging the debris material that is still on site after the Department of Energy (DOE) removed the majority of the spent nuclear fuel and damaged core from the site.²² The DCE does not include the cost of storing the packaged debris material until DOE accepts it for disposal.²³ The application states that “if necessary,” TMI-2 Solutions will submit an exemption request that would allow it to use nuclear decommissioning trust funds for debris material storage.²⁴

¹⁹ License Transfer Application, Attach. 1 at 11; *see also id.* Encl. 3B, “Form of Tax-Qualified Nuclear Decommissioning Trust Agreement,” at 6 (Trust Agreement); *id.*, Encl. 7, TMI-2 Solutions Decommissioning Schedule, at 1-2.

²⁰ License Transfer Application, Attach. 1 at 11; *see also id.*, Encl. 3B, Trust Agreement, at 6.

²¹ License Transfer Application, Attach. 1 at 12; *see also id.*, Encl. 4B, “Additional Financial Assurance & Performance Instruments,” at 1-2 (Additional Financial Assurance Instruments).

²² License Transfer Application, Attach. 1 at 11-12. The Application estimates that DOE has removed 99% of such debris material. *Id.*

²³ *Id.* at 12.

²⁴ *Id.*

B. Legal Requirements for License Transfer; Financial Qualifications Review

Under the Atomic Energy Act of 1954, as amended (AEA), and associated regulations, the NRC must give prior written consent for a power reactor license transfer.²⁵ A license transfer application must include information on “the identity and technical and financial qualifications of the proposed transferee as would be required by [applicable regulations as] if the application were for an initial license.”²⁶ A license transfer will be approved if the NRC determines that the proposed transferee is qualified to hold the license and that the proposed transfer is consistent with applicable law, regulations, and orders.²⁷

The Petition focuses on TMI-2 Solutions’ ability to pay all costs associated with decommissioning. A license transfer application must provide “reasonable assurance . . . that funds will be available to decommission the facility.”²⁸ The application also must provide information sufficient to demonstrate the “financial qualification of the applicant to carry out . . . the activities” for which the license is sought.²⁹ A license transfer proceeding does not approve a method of decommissioning, authorize decommissioning, or terminate the license of the facility involved.

²⁵ See AEA § 184, 42 U.S.C. § 2234 (providing that no license granted under the AEA “shall be transferred . . . directly or indirectly, through transfer of control of any license to any person, unless the Commission . . . shall give its consent in writing”); 10 C.F.R. § 50.80(a) (implementing the AEA provision as to power reactors).

²⁶ 10 C.F.R. § 50.80(b)(1)(i) (referencing 10 C.F.R. §§ 50.33, 50.34).

²⁷ *Id.* § 50.80(c).

²⁸ See *id.* §§ 50.33(k)(1), 50.80(b)(1)(i); see also *id.* § 72.30(b)-(c) (regarding ISFSI decommissioning).

²⁹ See *id.* § 50.33(f).

NRC regulations outline acceptable methods of demonstrating financial assurance of decommissioning funding, including the prepayment method.³⁰ Prepayment refers to prepaid funds deposited in an account segregated from the licensee's assets and outside of the licensee's administrative control (such as a trust, escrow account, or government fund), in an amount that "would be sufficient to pay decommissioning costs at the time permanent termination of operations is expected."³¹ A licensee that has set aside prepaid decommissioning funds "based on a site-specific [decommissioning] cost estimate . . . may take credit for projected earnings on the prepaid decommissioning trust funds, up to a 2[%] annual real rate of return from the time of the future funds' collection through the projected decommissioning period."³²

Our financial assurance requirements, combined with our procedures for review of a license transfer application, help ensure that a license is not transferred to an entity that will be financially unable to maintain and decommission the facility. But the level of assurance required for financial assurance of license transferees is not equivalent to the "extremely high assurance [required for] the safety of reactor design, construction and operation."³³ Rather, in such cases we "will accept financial assurances based on plausible assumptions and forecasts, even though the possibility is not insignificant that things will turn out less favorably than expected."³⁴

³⁰ See *id.* § 50.75(e)(1).

³¹ *Id.* § 50.75(e)(1)(i).

³² *Id.*

³³ *North Atlantic Energy Service Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 221-22 (1999).

³⁴ *Id.* at 222.

“Thus, the mere casting of doubt on some aspects of proposed funding plans is not by itself sufficient to defeat a finding of reasonable assurance.”³⁵

Although we do not require a license transfer applicant to provide absolute certainty in its financial assurances, our review of its financial ability to decommission a facility on the site does not end after approval of the transfer.³⁶ A licensee in decommissioning must continue to demonstrate annually, until the license is terminated, that funding for decommissioning (and, where applicable, spent fuel management) remains adequate.³⁷ The NRC’s examination of a transfer applicant’s financial qualifications therefore is an initial review conducted in light of its current financial picture and plausible financial projections.

II. DISCUSSION

A. TMIA’s Petition to Intervene

In its Petition, TMIA proposes three contentions relating to the general claim that the license application does not provide adequate financial assurance that the site can be adequately decommissioned. Two of Three Mile Island Alert, Inc.’s members provided statements in support of standing.³⁸ Patricia Longnecker and Joyce Corradi both state that they live within ten miles of the site and are concerned that they would be at risk if a shortfall in

³⁵ *Id.*

³⁶ See, e.g., *Exelon Generation Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-19-6, 89 NRC 465, 475-76 (2019).

³⁷ See 10 C.F.R. § 50.82(a)(8)(v).

³⁸ Petition, Attach., Declaration of Joyce Corradi (Apr. 13, 2020) (Corradi Decl.); Petition, Attach., Declaration of Patricia Longnecker (Apr. 15, 2020) (Longnecker Decl.).

decommissioning funds were to result in the incomplete cleanup of the site and radiological contamination of the land and the Susquehanna River.³⁹

We will grant a hearing to a petitioner who both demonstrates standing and offers at least one contention that meets the admissibility standards in our regulations.⁴⁰ An admissible contention must have factual support, be within the scope of the proceeding, raise a matter material to the findings the NRC must make in deciding whether to grant the license, and raise a genuine dispute with the application.⁴¹ The petitioner must identify the specific portions of the application that the petitioner disputes; or, if a petitioner claims that the application is missing information required by law, the petitioner must identify each omission and provide supporting reasons for the petitioner's belief.⁴² The admissibility rules are intended to ensure that adjudicatory hearings are held only on factually supported, substantive safety or environmental disputes over matters material to the NRC's decision to approve the challenged application. We do not reach the issue of standing because we find that none of TMIA's contentions is admissible.

As an initial matter, we observe that much of TMIA's contentions appears to be identical to those sponsored by different petitioners in a different proceeding—principally, from the State of New York's petition in the Indian Point license transfer proceeding.⁴³ As a result, TMIA's

³⁹ Corradi Decl. at 2, Longnecker Decl. at 2.

⁴⁰ See 10 C.F.R. § 2.309(a), (d), (f)(1).

⁴¹ *Id.*

⁴² *Id.* § 2.309(f)(1)(vi).

⁴³ See *Petition of the State of New York for Leave to Intervene and for a Hearing* (Feb. 12, 2020) (ML20043E118) (New York Petition in Indian Point). Applicants point out several points where TMIA's contentions were copied from the *Indian Point* license transfer proceeding. See Answer to TMIA at 6, 24-25, 40-41, 48 n.207, 50, 73.

contentions frequently include claims and references to matters that are not relevant to the TMI-2 site or to this application.⁴⁴ We have previously held that, where contentions were initially drafted by a different petitioner for a different proceeding, it is especially important to ensure that petitioners demonstrate a genuine material dispute with the particular application in question in order to grant a hearing.⁴⁵ This order focuses on TMIA's claims that are relevant to TMI-2.⁴⁶

⁴⁴ For example, Applicants here do not seek to transfer a Part 72 Independent Spent Fuel Storage Installation (ISFSI) license, because there is no ISFSI on the site. Yet TMIA argues at several points that the application fails to comply with 10 C.F.R. § 72.30(b), which pertains to ISFSIs, and repeatedly references, without explanation, DOE's license renewal application for the TMI-2 ISFSI in Idaho. See, e.g., Petition, Part II, Contentions at 1, 6, 9, 27, 29, 30, 32, 34, 36, 38. (TMIA separately paginated the contentions portion of its petition to intervene; we will therefore cite this portion as "Petition, Contentions at ___"). TMIA also argues that the DCE does not include the cost of "site restoration." See Petition at 20; *id.*, Contentions at 7, 9, 12, 32, 41, 45, 46. But unlike the *Indian Point* applicants, TMI-2 Solutions does not seek an exemption to use decommissioning trust funds for such restoration. Our regulations do not require that the licensee undertake non-radiological site restoration, and the use of decommissioning funds to do so is normally prohibited. See 10 C.F.R. §§ 50.2 (definition of "decommission"), 50.82(a)(8)(i)(A) (withdrawals from trust must be for "legitimate decommissioning activities").

⁴⁵ *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-5, 75 NRC 301, 323 (2012).

⁴⁶ TMIA filed documents on the NRC's electronic docket system after briefing was closed, including a letter to the Commission, two copies of a lawsuit filed by the State of Ohio against FirstEnergy company affiliates, and news articles relating to the FirstEnergy companies. See Letter from Kay Pickering and Thomas Bailey, Three Mile Island Alert, Inc., to the Commissioners (Sept. 10, 2020) (ML20266G413); Complaint & Demand for Jury Trial, State v. FirstEnergy Corp. (Ohio Ct. C.P.) (filed on the NRC docket on Sept. 23, 2020) (ML20269A340); Complaint & Demand for Jury Trial, State v. FirstEnergy Corp. (Ohio Ct. C.P.) (filed on the NRC docket on Oct. 5, 2020) (ML20269A526); John Funk, *FirstEnergy fires CEO, 2 other top executives in wake of \$61 million political bribery scandal*, Utility Dive, Oct. 31, 2020 (ML20305A420); Jim McKinnon, *Ratings service downgrades FirstEnergy over CEO firing, Ohio bribery investigation*, The Columbus Dispatch (Oct. 31, 2020) (ML20306A378). Because these filings were not accompanied by a motion for leave to file or any other pleading explaining their significance to TMIA's petition we do not consider them.

B. TMIA's Contentions

1. Contention 1: Credit for Trust Fund Earnings

TMIA's primary argument in Contention 1 is that the cash flow analysis in TMI-2 Solutions' PSDAR and DCE "impermissibly assume an annual [2%] real rate of return on nuclear decommissioning trust monies."⁴⁷ TMIA relies on 10 C.F.R. § 50.75(e)(1)(i), which provides, in pertinent part, as follows:

A licensee that has prepaid funds based on a site-specific estimate under § 50.75(b)(1) of this section may take credit for projected earnings on the prepaid decommissioning trust funds, using up to a 2 percent annual real rate of return from the time of future funds' collection through the projected decommissioning period, provided that the site-specific estimate is based on a period of safe storage that is specifically described in the estimate. This includes the periods of safe storage, final dismantlement, and license termination.⁴⁸

TMIA argues that the TMI-2 Solutions' decommissioning plan does not "contemplate a period of safe storage," because TMI-2 Solutions will proceed immediately to decommissioning.⁴⁹ Moreover, TMIA argues that when the NRC promulgated the final decommissioning trust fund rule in 2002, it expressly rejected the argument that licensees should be able to take a 2% earnings credit during the dismantlement period.⁵⁰

We find that TMIA's claim that the cash flow analysis cannot assume a 2% real rate of return on decommissioning trust funds does not raise an admissible contention. Petitioners

⁴⁷ Petition, Contentions at 1.

⁴⁸ *Id.* at 3; 10 C.F.R. § 50.75(e)(1)(i).

⁴⁹ Petition, Contentions at 3.

⁵⁰ *Id.* at 8; see Final Rule, Decommissioning Trust Provisions, 67 Fed. Reg. 78,332, 78,338 (Dec. 24, 2002).

both misinterpret the applicable regulation and inaccurately describe the DCE. The contention therefore fails to raise a genuine dispute with the application.

If TMIA means to argue that *no* licensee would be allowed to take a 2% credit for earnings on its prepaid decommissioning funds once it starts active decommissioning, the regulation contradicts that interpretation. Section 50.75 allows licensees in active decommissioning, under specific conditions, to take a 2% credit for a return on prepaid funds, “through the projected decommissioning period.”⁵¹

To the extent that TMIA interprets the reference to “safe storage” in section 50.75(e) to mean that a licensee may only take credit for earnings through decommissioning if it has chosen “SAFSTOR” decommissioning, it is also incorrect.⁵² The regulation does not use the terms “SAFSTOR” or “DECON”; these are general terms used to describe approaches to decommissioning. As explained in the Revised Analyses of Decommissioning for the Reference Pressured Water Reactor Power Station, both DECON and SAFSTOR typically involve “a period of plant safe storage.”⁵³ After the initial period of safe storage, however, plants undergoing SAFSTOR enter a period of “extended safe storage” of the facility during which there is no spent fuel in the pool.⁵⁴ The regulation does not require that the licensee keep the

⁵¹ 10 C.F.R. § 50.75(e)(1)(i).

⁵² Petition, Contentions at 3-4, 7.

⁵³ “Revised Analyses of Decommissioning for the Reference Pressured Water Reactor Power Station, Effects of Current Regulatory and Other Considerations on the Financial Assurance Requirements of the Decommissioning Rule and on Estimates of Occupational Radiation Exposure,” NUREG/CR-5884 (Nov. 1995), at 1.2 (ML14008A187). The report explains that the first 3 steps of both approaches are 1) pre-shutdown planning, 2) plant deactivation, and 3) safe storage while the spent fuel pool is emptied. *Id.* Under DECON, the fourth step is dismantlement and license termination. *Id.*

⁵⁴ *Id.*

facility in safe storage for any particular period of time. Instead, the regulation requires that in order to take a 2% credit for earnings throughout decommissioning, the cost estimate must be based on a period of safe storage specifically described in the DCE. That period will vary for each plant depending on the age, type, and amount of fuel in the pool.

TMIA's argument that the Applicants do not propose a period of safe storage for TMI-2 also misconstrues the application. TMI-2 is currently in safe storage—PDMS—and has been for twenty-seven years.⁵⁵ The PSDAR additionally anticipates that this period will continue while “all necessary engineering and licensing actions” prerequisite to DECON are completed.⁵⁶ Therefore, TMIA's Contention 1 does not raise a material dispute with the application.

2. Contention 2: Inadequate Decommissioning Financial Assurance

In Contention 2, TMIA argues that TMI-2 Solutions does not “show adequate decommissioning financial assurance and/or adequate funding for spent nuclear fuel management in violation of 10 C.F.R. §§ 50.33(f) and (k)(1), 50.40(b), 50.54(bb), 50.75(b)(1) and (e)(1)(i), 50.80(b)(1)(i), 50.82(a)(8)(vii), and 72.30(b) because TMI-2 Solutions' Amended PSDAR and [DCE] underestimate[] license termination, site restoration and spent fuel management costs.”⁵⁷ Specifically, TMIA argues that the decommissioning trust funds will be inadequate because the Applicants' DCE is deficient in five particular areas (designated as “bases” in the Petition).

⁵⁵ PSDAR at 3.

⁵⁶ *Id.* at 4.

⁵⁷ Petition, Contentions at 9.

a. Basis A: Likelihood of Greater Contamination at the Site

In Contention 2, Basis A, TMIA argues that the PSDAR and cost estimate fail to account for the likely existence of greater contamination at the TMI-2 site than that for which the DCE currently accounts.⁵⁸ TMIA argues that to avoid the risk of unknown costs, TMI-2 Solutions should have performed a site characterization to ensure that there is no unknown contamination.⁵⁹ In support, TMIA provides various exhibits⁶⁰ and also cites experiences at other decommissioning reactors where discovery of additional contamination increased decommissioning costs.⁶¹

We disagree that TMI-2 Solutions must conduct a site survey prior to filing its license transfer application or submitting its PSDAR. TMIA cites no regulation requiring TMI-2 to conduct such a survey before it develops its DCE. Rather, our regulations require a site characterization to be submitted with the license termination plan “at least two years before termination of the license.”⁶² The PSDAR confirms that TMI-2 Solutions intends to conduct the site characterization in accordance with agency guidance.⁶³

⁵⁸ *Id.* at 13-21.

⁵⁹ *Id.* at 15-16.

⁶⁰ Exhibit A, “Incident Chronology at TMI from NRC: 1979-2020” (undated) (ML20106F218) (Exhibit A); Exhibit C, “Chronology of Health Problems at Three Mile Island” (undated) (ML20106F220) (Exhibit C); Exhibit D, “Leaks, release & exposures at TMI” (undated) (ML20106F221) (Exhibit D); Exhibit E, “Fires and Fire-Related Challenges at the Three Mile Island Nuclear Generating Station” (undated) (ML20106F222) (“Exhibit E”).

⁶¹ Petition, Contentions at 20-21.

⁶² See 10 C.F.R. § 50.82(a)(9)(i), (ii)(A).

⁶³ The PSDAR provides that TMI-2 will conduct a site characterization as part of its license termination plan, which will be prepared in accordance with “Standard Format and Content of License Termination Plans for Nuclear Power Reactors,” Regulatory Guide 1.179, rev. 2 (July 2019) (ML19128A067) (Reg. Guide 1.179). See PSDAR at 7. As described in Regulatory Guide 1.179, the LTP will develop the final radiological survey plan and survey methods using

TMIA's claim that the likely existence of additional contamination may result in cost overruns and inadequate decommissioning funds is factually unsupported. The documents that TMIA submitted as exhibits do not support the claim that there is, or is likely to be, unknown contamination at the TMI-2 site. These exhibits consist of lists of past incidents or claims, many of which involve TMI-1. For example, the chronology of incidents in Exhibit A, where they relate to TMI-2, relate to incidents that occurred before the post-accident cleanup was finished and TMI-2 was placed in PDMS.⁶⁴ Exhibit D is an unattributed and undated list of incidents of worker exposures during the TMI-2 cleanup and incidents of releases and exposures occurring at TMI-1, but neither of these type of incidents support the claim that there is unknown contamination at the TMI-2 site. And Exhibits C and E do not relate to radiological leaks or discharges.⁶⁵

TMIA's argument that the DCE "assigns no value to out-of-scope risk" such as "fuel location, hot spots, flooding, staffing, overhead, and waste disposal" is also unavailing.⁶⁶ TMI-2's cost estimate clearly accounts for low-level waste disposal and labor costs.⁶⁷ In

the guidance in "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)," NUREG-1575, rev. 1 (Aug. 2000) (ML003761445). See Reg. Guide 1.179 at 6-7.

⁶⁴ Exhibit A consists of 77 pages, but references to TMI-2 end on page 18. The chronology continues with accounts of legal challenges, news items, studies, inspections, and incidents occurring at TMI-1 or at the ISFSI in Idaho, which are not part of the license transfer proceeding. Neither the Board nor the Commission is expected to search through voluminous documents in search of assertions that would support TMIA's claims, and we decline to do so here. See, e.g., *Seabrook*, CLI-12-5, 75 NRC at 332; *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 and 2), CLI-99-4, 49 NRC 185, 194 (1999).

⁶⁵ Exhibit C discusses lawsuits and studies concerning the health effects of the TMI-2 accident. Exhibit E lists incidents where fires occurred or fire hazards that were discovered at either TMI-1 or TMI-2, but none of the incidents appear to have caused a radiological discharge.

⁶⁶ Petition, Contentions at 15.

⁶⁷ DCE at 3.

addition, this claim does not address the contingency provided in the DCE for unforeseen costs and therefore fails to dispute the application.⁶⁸

We also find unpersuasive TMIA's argument that the amount of damaged fuel already removed from the reactor is in question. TMIA disputes "the amount of damaged fuel that has been removed from TMI-2."⁶⁹ The only support TMIA cites for this claim is a twenty-seven-year-old statement by a nuclear physicist that discusses disposal options for contaminated wastewater from the shutdown reactor.⁷⁰ The statement does not discuss the amount of damaged fuel that has been removed from TMI-2 or appear to support TMIA's claims in Contention 2.⁷¹

TMIA further cites its Exhibit D to show that in the past, "[r]adioactive steam was . . . released directly into the atmosphere" and "[r]adioactive water was released directly into the Susquehanna River."⁷² But these claims are neither supported nor relevant. As discussed above, Exhibit D is a list of purported incidents, only some of which relate to TMI-2. Further, Exhibit D does not state that radioactive water was released into the Susquehanna River.⁷³

⁶⁸ See DCE at 3.

⁶⁹ Petition, Contentions at 17 (citing Petition, Exhibit B, Declaration of Dr. Michio Kaku (ML20106F219) (Kaku Decl.)). Although the Kaku Declaration is not dated, TMIA's Petition states that it dates from August 1993. Petition at 17.

⁷⁰ See Kaku Decl.

⁷¹ See *id.*

⁷² Petition, Contentions at 18 (citing Petition, Exhibit D, "Leaks, release & exposures at TMI").

⁷³ See Exhibit D at 1 (stating that in 1980, the Susquehanna Valley Alliance "successfully prevented GPU/[Metropolitan Edison] from dumping 700,000 gallons of radioactive water into the Susquehanna River").

And TMIA does not explain how incidents where radioactive steam was released into the atmosphere would cause additional cleanup costs today.

TMIA further argues that additional contamination will likely be discovered once decommissioning starts because this has been the case at other decommissioning reactors. TMIA points to Maine Yankee Atomic Power Station, where, it claims, “the amount of asbestos-containing material . . . was nearly triple the originally estimated amount,” and the Haddam Neck Nuclear Plant, where tritium and strontium-90 contamination was discovered “deep underground” and required extensive excavation.⁷⁴ However, these examples do not support a finding that similar conditions are likely to exist at TMI-2.

We therefore conclude that Basis A is factually unsupported and fails to raise a genuine dispute with the application.

b. Basis B: Costs to Repackage Debris Material

TMIA claims in Contention 2, Basis B that the DCE improperly excludes costs to “repackage spent fuel for transport” or to reimburse DOE for money “DOE paid or will pay to licensees for license packaging costs.”⁷⁵ TMIA also argues that the DCE therefore “fails to demonstrate adequate funding for spent fuel management” as required by 10 C.F.R. §§ 50.54(bb) and 50.82(a)(8)(vii)(B) and (C).⁷⁶

As an initial matter, this basis does not address the portions of the application that account for debris material packaging costs.⁷⁷ Further, TMIA’s claim that repackaging will be

⁷⁴ Petition, Contentions at 20.

⁷⁵ *Id.* at 22-28; *see also* TMIA Reply at 10-12.

⁷⁶ Petition, Contentions at 22-28.

⁷⁷ *See* License Transfer Application, cover letter at 2 (“TMI-2 Solutions will be responsible for developing NRC compliant storage and/or disposal plans for any Debris Material until title to the Debris Material is transferred to the U.S. Department of Energy); *see also id.*, Attach. 1, at 10

necessary is factually unsupported. The application states that there are no loaded spent fuel canisters at the TMI-2 site. TMI-2 Solutions will have to recover and package the remaining debris material during Phase 1.⁷⁸ And TMIA does not offer support for its claim that the canisters TMI-2 Solutions selects for packaging would be incompatible with transportation casks DOE will ultimately provide when it removes the debris material from the site.⁷⁹ Therefore, TMIA's claims regarding repackaging costs do not support an admissible contention.

(recovery and packaging of debris material will be part of "Phase 1" of the project, which will conclude in 2029 and cost a projected \$563 million); see *also id.*, Encl. 7, TMI-2 Solutions Decommissioning Schedule, at 6; see *also* PSDAR at 10.

⁷⁸ PSDAR at 7.

⁷⁹ TMIA's argument that TMI-2 Solutions will eventually have to reimburse DOE for its costs relating to repackaging fuel and its reliance on *System Fuels, Inc. v. United States*, 818 F.3d 1302 (Fed. Cir. 2016) appear to be identical to the arguments made by the State of New York in the Indian Point License Transfer proceeding. Compare Petition at 22-25 with New York Petition in Indian Point, at 40-43. *System Fuels* held that a spent fuel owner suing the DOE for breach of the standard contract for spent fuel storage could recover its costs incurred in loading spent fuel into storage canisters. 818 F.3d at 1306-07. The court rejected DOE's argument that because, under the contract, the expense of loading fuel into a *transportation* container falls on the spent fuel owner, DOE should not have to reimburse the costs of loading the fuel into *storage* containers. The court acknowledged that if, in the future, DOE were to accept fuel in its current package, it could be entitled to reimbursement for the costs it already paid to load the fuel into storage canisters. *Id.* at 1307. But the court called DOE's argument "speculative." *Id.*

c. Basis C: Mixed Waste Disposal

In Basis C, TMIA claims that the DCE and PSDAR underestimate the costs related to disposal of mixed waste.⁸⁰ TMIA further argues that the PSDAR and DCE do not account for the costs associated with mixed waste disposal, in violation of 10 C.F.R. § 50.75(b) and (e)(1)(i).⁸¹ For example, radiologically contaminated lead shielding is mixed waste. TMIA argues that TMI-2 Solutions does not acknowledge that there is already mixed waste on the site, and the decommissioning cost estimate fails to account for the disposal of “mixed waste currently stored at Unit 2.”⁸² TMIA further asserts that the cost estimate does not account for disposal of Class B, Class C, and greater-than-Class-C LLRW.⁸³

To support this claim, TMIA provides a letter from the Pennsylvania Department of Environmental Protection directed to the NRC concerning conditions at the site.⁸⁴ The letter asks several questions regarding decommissioning at the site, including one question concerning the disposal of lead shielding.⁸⁵ However, the Pennsylvania letter simply poses questions, rather than providing factual support, and we note that the Applicants responded directly to the Pennsylvania Department of Environmental Protection in a letter addressing each of its concerns, including the subject of mixed waste.⁸⁶ According to that response, mixed

⁸⁰ Petition, Contentions at 11, 29-31.

⁸¹ *Id.* at 30-31.

⁸² *Id.*

⁸³ *Id.* at 31.

⁸⁴ *Id.* at 30-31; see Letter from Patrick McDonnell, Pennsylvania Department of Environmental Protection, to Kristine Svinicki, NRC (Apr. 6, 2020) (ML20100K717) (PADEP Letter).

⁸⁵ PADEP Letter at 2.

⁸⁶ Letter from Gregory H. Hanlon, GPU Nuclear, to Patrick McDonnell, Pennsylvania Department of Environmental Protection (Apr. 13, 2020) (attached as *Commonwealth of*

waste is expected to be shipped to the EnergySolutions disposal facility in Clive, Utah, which is permitted to accept mixed waste.⁸⁷ The application also discusses shipping LLRW to the Clive facility.⁸⁸ TMIA does not dispute these statements in its petition or reply brief. Therefore, we conclude that Basis C lacks factual support and does not raise a genuine dispute with the application.

d. Basis D: Likely Delays

In Basis D, TMIA argues that TMI-2 Solutions “projects an unreasonably short timeframe for the normalization process referred to as for Phase 1” of the project, because there could be unaccounted-for delays.⁸⁹ TMIA states that the history of decommissioning nuclear plants in the United States shows that “delays and cost overruns are the norm rather than the exception.”⁹⁰

However, TMIA’s claim offers no support—such as an expert declaration—for its claim that either the ten years allotted for Phase 1 or the sixteen and a half years allotted for overall completion of decommissioning is unreasonably short.⁹¹ In addition, the application and

Pennsylvania Department of Environmental Protection for Leave to Intervene and Request for Extension of Time to File Hearing Request (Apr. 15, 2020), (Exhibit B)).

⁸⁷ *Id.* at 5.

⁸⁸ See License Transfer Application, Attach. 1 at 3 n.1 (“Final disposition of LLRW from the TMI-2 site will depend on the waste characteristics identified and comparison with waste acceptance criteria for the Clive facility or other disposal options.”); see *also id.* at 12.

⁸⁹ Petition, Contentions at 32. We observe that the License Transfer Application and the PSDAR refer to Phase 1 as “Source Term Reduction.” See License Transfer Application, Attach. 1, Encl. 7, TMI-2 Solutions Decommissioning Schedule, at 4; PSDAR at Encl. 1B, Fig. 1B-2.

⁹⁰ Petition, Contentions at 34.

⁹¹ See PSDAR at Encl. 1B, Fig. 1B-2; License Transfer Application, Attach. 1, Encl. 7, TMI-2 Solutions Decommissioning Schedule, at 4. Under the schedule, Phase 1 and Phase 2 overlap.

PSDAR do describe each project activity and provide a graphic illustration of when each activity is expected to start and finish.⁹² TMIA does not address the specific activities described in that schedule or explain why they could not be performed in the time allotted. TMIA offers only a general assertion that other decommissioning projects have taken longer or experienced delays.⁹³

In addition, TMIA does not support its claim that delays will materially affect the cost estimate and cause a deficiency in the decommissioning trust fund. While it is certainly possible that the projected schedule may slip from that reflected in the current PSDAR, TMIA has not provided a basis to find that such a delay would materially impact the Applicants' estimates. Moreover, delays in the schedule that increase costs would be captured in the licensee's annual financial assurance status reports.⁹⁴ If the status report reveals that the delay would cause a funding shortfall, TMI-2 Solutions could be required to provide additional financial assurance.⁹⁵ Accordingly, we find that this basis lacks factual support and does not raise a genuine dispute with the application.

⁹² License Transfer Application, Attach. 1, Encl. 7, TMI-2 Solutions Decommissioning Schedule, at 4.

⁹³ Petition, Contentions at 34.

⁹⁴ See 10 C.F.R. § 50.82(a)(8)(v).

⁹⁵ See *id.* § 50.82(a)(8)(vi).

e. Basis E. Market Fluctuations

In Basis E TMIA argues that the decommissioning trust fund is inadequate and has likely lost value because the COVID-19 public health emergency has caused a steep decline in the securities market.⁹⁶ TMIA argues that the application thus fails to satisfy the requirements of 10 C.F.R. §§ 50.33(f), 50.33(k)(1), 50.54(bb), 50.75(b)(1), 50.75(e)(1)(i), and 72.30.⁹⁷

But TMIA does not raise a genuine dispute with the information in the application. The Purchase Agreement includes a condition that the decommissioning trust fund must be worth a minimum of \$800 million at the time of closing.⁹⁸ Moreover, the Applicants have provided additional assurances in the form of an escrow account and a letter of credit. TMIA does not address these assurances. Additionally, TMIA's claim that "recent economic data indicates that trusts have declined in value" is unsupported because TMIA does not cite data or an expert declaration to support this assertion.⁹⁹ Therefore, these claims do not support an admissible contention.

⁹⁶ Petition, Contentions at 36-37; *see also id.* at 45, 48-49 (same argument made in support of Contention 3).

⁹⁷ *Id.* at 36. In its reply brief, TMIA attempts, without explanation, to incorporate in its entirety the arguments concerning market volatility made by the New York Attorney General in the Indian Point License Transfer proceeding. TMIA Reply at 13 (citing *Motion for Leave to Amend Contentions NY-2 and NY-3* (Mar. 24, 2020), at 3-12 (ML20084Q191)). We decline to analyze which, if any, of New York's arguments apply to TMIA's claims, whether those arguments are within the scope of TMIA's reply brief, or whether they are timely made. *Seabrook*, CLI-12-5, 75 NRC at 332.

⁹⁸ Answer to TMIA at 50, *see also* License Transfer Application, Attach. 1, Encl. 1B ¶ 7.1.4.

⁹⁹ Although New York's Motion in *Indian Point* was supported by an expert declaration, much of that declaration concerned information specific to the trust provisions for the Indian Point facility. *See Supplemental Declaration of Chiara Trabucchi* (Mar. 23, 2020) ¶¶ 9-12 (ML20084Q197). And, as we note above, we reject TMIA's attempt to adopt wholesale New York's arguments and supporting information. We also observe that according to the Applicants—at least at the time they filed their response to TMIA's petition—the decommissioning trust fund had not declined in value. Answer to TMIA at 50.

3. *Contention 3: Transferee is Not Financially Qualified*

TMIA argues in Contention 3 that the application does not establish that TMI-2 Solutions is financially qualified under 10 C.F.R. §§ 50.33(f), 50.40(b), 50.80(b), 50.82(a), and 72.30(b) to be the license transferee.¹⁰⁰ It offers several theories why TMI-2 cannot meet the financial qualifications standards.

TMIA argues that TMI-2 Solutions is inherently financially unsound because it is a limited liability company whose sole purpose is to decommission TMI-2. TMIA argues that “[f]inancial assurance models typically assume facility owners are revenue-generating concerns.”¹⁰¹ It further argues that TMI-2 Solutions is a “fictional company” and that the Commission should require the Applicants to provide additional forms of financial assurance.¹⁰² TMIA also asserts that the limited liability corporate structure of TMI-2 Solutions “encourages riskier behavior and induces companies to underreport liabilities,” which undermines the Commission’s ability to evaluate TMI-2 Solutions’ financial qualifications.¹⁰³

We have rejected similar arguments in previous proceedings.¹⁰⁴ In doing so, we explained that a limited liability corporation is treated the same as other corporations with

¹⁰⁰ Petition, Contentions at 38-49.

¹⁰¹ *Id.* at 41.

¹⁰² *Id.* at 42-43. In Contention 3, TMIA also reiterates claims that we have already discussed, for example, that “market volatility” due to the COVID-19 public health emergency has “likely significantly eroded the principal” of the trust and that Applicants cannot take credit for earnings on the trust funds during active decommissioning. *Id.* at 44-45.

¹⁰³ *Id.* at 47.

¹⁰⁴ *Vermont Yankee Nuclear Power Corp. and AmerGen Vermont, LLC* (Vermont Yankee Nuclear Power Station), CLI-00-20, 52 NRC 151, 172-73 (2000); *Northern States Power Co.* (Monticello Nuclear Generating Plant, Units 1 and 2; Prairie Island Independent Spent Fuel Storage Installation), CLI-00-14, 52 NRC 37, 57 (2000); *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000).

respect to meeting NRC requirements and that the Commission has issued reactor licenses to limited liability corporations for decades.¹⁰⁵ TMIA does not cite any law, regulation, or guidance suggesting that a limited liability corporation is inherently incapable of holding an NRC license.¹⁰⁶ Moreover it does not cite any legal support for its argument that the license holder decommissioning a reactor must have some other, ongoing business concern that would generate income independent of the decommissioning trust fund. TMIA does not provide factual or expert support for its claim that the limited liability corporate form encourages riskier behavior.

TMIA additionally asserts that the investment guidelines for the trusts are permissive and create investment risk.¹⁰⁷ It also states that the trustee is “authorized to appoint and indemnify foreign custodians” to hold foreign securities.¹⁰⁸ But TMIA does not explain or support its assertion that the trust’s investment guidelines are permissive, and it does not cite any law or regulation that would prevent the decommissioning trust fund trustee from foreign investment.

We disagree with TMIA’s argument that if there is a decommissioning shortfall, TMI-2 Solutions would not be able to provide the additional financial assurances our regulations require. TMIA argues that “there is little reason to believe [that] banks, insurers, or other purveyors of third-party financial assurance instruments . . . would offer such instruments at a

¹⁰⁵ *Vermont Yankee*, CLI-00-20, 52 NRC at 173; *Monticello*, CLI-00-14, 52 NRC at 57; *Oyster Creek*, CLI-00-6, 51 NRC at 208.

¹⁰⁶ According to the Applicants, there are “ten different LLCs currently licensed by the NRC to operate [thirty-eight] nuclear plants.” Answer to TMIA at 59.

¹⁰⁷ Petition, Contentions at 47.

¹⁰⁸ *Id.*

price accessible to limited liability entities saddled with environmental cleanup obligations.”¹⁰⁹ But this argument does not address information in the application; specifically, that TMI-2 Solutions will have access to “additional decommissioning funding assurance instruments worth up to \$100 million” and a Parent Guarantee from EnergySolutions.¹¹⁰ Insofar as TMIA argues that third-party institutions would not provide insurance for this venture, its argument is factually unsupported.

Finally, TMIA argues that “the granting of an eventual exemption to allow the use of trust fund monies for non-decommissioning purposes” could have adverse tax consequences, and TMIA asserts that NRC Staff should “request and review any private letter rulings” from the IRS concerning tax treatment of the decommissioning trust fund’s earnings.¹¹¹ However, the TMI-2 application does not request such an exemption.¹¹² TMIA therefore does not raise a genuine dispute with the application. To the extent that TMIA proposes this basis in case the Applicants were to request such an exemption in the future, it is speculative and unsupported.

III. CONCLUSION

Based on the forgoing, we conclude that Petitioners have not presented an admissible contention. We *deny* their hearing request, and we *terminate* the proceeding.

¹⁰⁹ *Id.* at 40-41.

¹¹⁰ See License Transfer Application, Attach. 1, at 10-11. The “additional funding instruments” will consist of a “(i) a Back-Up & Provisional Nuclear Decommissioning Trust, segmented into a Back-Up Trust Account and a Provisional Trust Account; (ii) an Irrevocable Letter of Credit; (iii) an Irrevocable Disposal Capacity Easement; [and] (iv) a Financial Support Agreement.” *Id.* at 11.

¹¹¹ Petition, Contentions at 44.

¹¹² See New York Petition in Indian Point at 63.

IT IS SO ORDERED.

For the Commission



Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, MD
this 15th day of January 2021.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
FirstEnergy Companies) Docket No. 50-320 LT
)
TMI-2 Solutions, LLC)
)
(Three Mile Island Nuclear Station,)
Unit 2))

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **COMMISSION MEMORANDUM AND ORDER (CLI-21-02)** have been served upon the following persons by Electronic Information Exchange.

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Three Mile Island Nuclear Station, Unit 2, Docket No. 50-320 LT
COMMISSION MEMORANDUM AND ORDER (CLI-21-02)

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