

## NUCLEAR DECOMMISSIONING CITIZENS ADVISORY PANEL PUBLIC SERVICE DEPARTMENT

# Nuclear Decommissioning Citizens Advisory Panel Annual Report to the Governor and the Vermont Legislature

2023

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1 2	- Nuclear Decommissioning Citizens Advisory Panel - 2023 Annual Report to the Governor of Vermont and the
3 4	Energy Committees of the General Assembly (House Environment & Energy,
5	House Commerce & Economic Development,
6	and
7	Senate Natural Resources & Energy Committees)
8	Senate Natural Resources & Energy Committees)
	I. Statutory Authority and Duties
9 10	
11	The nineteen-member Vermont Nuclear Decommissioning Citizens Advisory Panel ("NDCAP" or
12 13	the "Panel") was established during the 2014 Legislative Session as part of Act 179 (Section E.233; pages 141 through 148 of the Act). Details on the original membership and duties of NDCAP were
14	outlined in this Act., which is available online at:
15	https://legislature.vermont.gov/Documents/2014/Docs/ACTS/ACT179/ACT179%20As%20Enac
16	<u>ted.pdf</u> .
17	
18	Current Membership and duties of NDCAP were established during the 2021 legislative session as
19	part of Act 54, (Section 13, pages 11 through 16 of the Act). Details on the current membership
20	and duties of NDCAP are available online at:
21	https://legislature.vermont.gov/statutes/fullchapter/18/034.
22	
23	The list of current members of the Nuclear Decommissioning Citizens Advisory Panel may be
24	found at <a href="http://publicservice.vermont.gov/vermont-nuclear-decommissioning-citizens-">http://publicservice.vermont.gov/vermont-nuclear-decommissioning-citizens-</a>
25	advisory-panel-vt-ndcap (aka, the NDCAP website). Changes in Panel membership during 2023
26	may be discerned by reviewing the meeting minutes and meeting recordings available at the
27	NDCAP website. As of November 1, four of the Panel's nineteen positions are vacant. The Panel's
28 29	second citizen-appointee by the Governor of Vermont is vacant due to the untimely passing of Stephen Skibniowsky, the Panel's elected Chair for 2023, on September 28. The Panel's second
29 30	citizen-appointee by the Vermont Senate President Pro Tempore became vacant with the
31	expiration of Emily Davis's appointment on October 31. The two optional Panel representatives
32	for Massachusetts and New Hampshire towns near the Vermont Yankee site were vacant
33	throughout 2022 and 2023. As of November 1, f
34	
35	Note that the NDCAP website was migrated to a new location in late 2022:
36	http://publicservice.vermont.gov/vermont-nuclear-decommissioning-citizens-advisory-panel-vt-
37	ndcap
38	
39	The NDCAP website was previously available at:
40	http://publicservice.vermont.gov/electric/ndcap. In instances where Panel documents, including
11	previous Appual Reports, reference this older website, the newer

http://publicservice.vermont.gov/vermont-nuclear-decommissioning-citizens-advisory-panel-vt-ndcap website should be accessed instead.

#### II. Charter

The NDCAP Charter was adopted on February 25, 2015 and was amended on May 26, 2016. The current Charter is available at: <a href="NDCAP">NDCAP</a> Charter as of 2016.05.26. The Charter is also available on the NDCAP website Main Page at:

http://publicservice.vermont.gov/vermont-nuclear-decommissioning-citizens-advisory-panel-vt-ndcap

No changes to the NDCAP Charter were made during 2023. However, changes to the NDCAP Charter may be necessary due to the changes in Panel membership and duties implemented in <u>ACT 54 of the 2021 Legislative Session</u>. Where any discrepancies between Act 54 language and NDCAP Charter exist, the Act 54 language takes precedence.

NDCAP's Federal Nuclear Waste Policy (FNWP) Committee studies federal policy options for nuclear waste and considers how Vermont Yankee is situated within the national landscape. By methodically procuring input from Vermont's federal delegation, industry experts and other stakeholders, the Committee accordingly advances the learning goals of NDCAP Should the Committee arrive at an any affirmative policy position, the Committee will recommend that NDCAP adopt the advisory opinion, pursuant to the Panel's stated purpose, where: "NDCAP shall advise the Governor, General Assembly, the agencies of the state, and the public on issues related to decommissioning."

#### **III. Meeting Highlights**

The NDCAP held three Full Panel meetings in 2023; meetings were held in May, September, and December. Additionally, the NDCAP FNWP Committee held five meetings in 2023. FNWP Committee meetings were held in March, June, September, and December, with two meetings held in June. All Full Panel and FNWP Committee meetings were open to the public and opportunities for public comments were provided. Because of continuing COVID- 19 pandemic concerns, all 2023 NDCAP meetings were conducted entirely as webcasts, as was permitted by <a href="ACT 1 of the 2023 Legislative Session">ACT 1 of the 2023 Legislative Session</a>. Full Panel webcasts were conducted via Zoom using services provided by Brattleboro Community Television. FNWP Committee webcasts were conducted using Microsoft Teams.

While the May Full Panel meeting was chaired by Steve Skibniowsky, the September and December meetings were chaired by Panel Vice-Chair Lissa Weinmann. Mr. Skibniowsky was unavailable for the September meeting due to a serious health issue. Ms. Weinmann continued as Acting Chair of the Panel after Mr. Skibniowsky's passing in late September. All FNWP Committee meetings held in 2023 were also chaired by Ms. Weinmann since she was also the FNWP Committee Chair for 2023.

The May, September, and December Full Panel meetings included updates on recent VY decommissioning activities by both NorthStar and the State of Vermont. Educational and issuespecific topics were also discussed at these meetings. Opportunities for discussion and comments from Panelists and the public on all covered topics were provided during each meeting. A summary of each Full Panel meeting is presented below.

The minutes of each meeting can be found on the NDCAP website (a dedicated section of the Public Service Department's recently upgraded website) at

http://publicservice.vermont.gov/vermont-nuclear-decommissioning-citizens-advisory-panel-vt-ndcap. A complete video or webcast recording for each meeting can be found at: https://www.brattleborotv.org/vt-nuclear-decommissioning-citizens-advisory-panel.

Links to these video recordings are also available through the NDCAP website. Additional information regarding VY's active decommissioning is available at the Public Service Department's "VY Decommissioning" website at: <a href="http://publicservice.vermont.gov/vermont-nuclear-decommissioning-citizens-advisory-panel-vt-ndcap.">http://publicservice.vermont.gov/vermont-nuclear-decommissioning-citizens-advisory-panel-vt-ndcap.</a>

Further details and meeting summaries of the FNWP Committee meetings held in 2023 are available in Section XI.B of this report.

#### May 8, 2023

The Panel's first regular meeting of the year occurred on May 8. At this meeting, NorthStar and several State Agencies summarized VY decommissioning activities that occurred since the Panel's December 12, 2022 meeting.

#### • NorthStar Update on VY Site Decommissioning Activities:

Panelist Corey Daniels, VY's Senior Spent Fuel Storage Manager, summarized decommissioning activities completed since December 2022. (Slides for this presentation are available from the Panel's website.) NorthStar has worked well over 1.4 million hours without an OSHA Recordable Lost Time Accident since starting VT Yankee's active decommissioning in January 2019. The Nuclear Regulatory Commission (NRC) has issued no cited violations during this time. The project remains ahead of schedule. Progress on dismantling the Reactor Building (RB) components and preparations for Turbine Building (TB) demolition was described. Downsizing and removal of the RB Torus structure continues. The site's former Emergency Diesel Generators have been segmented and shipped for offsite disposal. The last piece of the Turbine, the Turbine Stator, has been segmented to allow lifting with the TB Crane. The Stator will be moved outside for further downsizing. The Start-Up Transformers have been dismantled and removed. Clearing of belowgrade piping in the Advanced Off-Gas Building Courtyard was also discussed.

NorthStar continues to average 3 to 4 radioactive waste shipments per week. As of April 20, 65 radioactive waste shipments have occurred this year; 602 shipments have occurred since the start of decommissioning (in January 2019).

In response to Panelist questions Corey Daniels noted that roughly 100 workers work at VY on a given workday. VY's contaminated water monitoring is typical for decommissioning power plant sites. The VY piping that were identified as containing Tritium (circa 2011) were near the Advanced Off-Gas (AOG) Building Courtyard. Work to remove the AOG Courtyard piping is ongoing.

#### Department of Environmental Conservation (DEC) Update:

Graham Bradley, Hazardous Sites Manager in DEC's Waste Management and Prevention Division outlined the Agency of Natural Resources (ANR) / DEC's recent interactions with VY. (Slides for this presentation are available from the Panel's website.) Regular status calls (usually on a biweekly basis), draft permit and corrective action plan reviews continue. Sampling programs for non-radiological contaminants continue to show no significant contamination issues at the VY site. No unexpected site contaminations have been identified thus far. ANR/DEC continues to work closely with NorthStar's remediation contractor, Haley & Aldrich, and DEC's consultant, Atlas, on plans for addressing potential contaminant issues in VT Yankee site's previously identified Areas of Concern (AOCs). Due to ongoing structure demolitions onsite, DEC's groundwater monitoring program was suspended to avoid inadvertently destroying sampling wells. The monitoring program has collected over three years of data without identifying new causes for concern. DEC continues to work with NorthStar on developing a post-demolition groundwater monitoring plan.

Corrective Action Plans for addressing contaminations in onsite AOC #5 and AOC #7 have been approved. Post demolition surveys for AOC #6 (Chemistry Lab Drains) and AOC #8 (Transformer Pads) were also discussed. Changes in several non-radiological waste monitoring programs were described. These changes were made due to work completed to date at VY. A stream alteration permit in preparation for removal of the River Intake and River Discharge structures was issued on May 2. Mr. Bradley also noted that he had recently visited VY to observe onsite work first-hand.

#### • Public Service Department (PSD) Update:

PSD Special Counsel Eric Guzman outlined PSD's fiscal oversight of the VY Decommissioning project required by the Memorandum of Understanding (MOU) in effect as part of NorthStar's purchase of VY. Nick Capik of Four Points Group (FPG), PSD's consultants for overseeing the project, were also present to provide additional information, as needed. (Slides for this presentation are available from the Panel's website.)

PSD's financial and technical oversight role was outlined, which includes receiving updates on work completed versus work remaining and project expenditures versus funds remaining. PSD coordinates with other State Agencies and FPG to assess project status and whether

decommissioning trust fund reimbursement requests are consistent with the work completed. PSD also meets with NorthStar regularly to conduct any follow-up necessary on NorthStar's self-reporting. Regular site visits by FPG are conducted to observe completed work. The most recent visits occurred in February and April. The site visits continue to show that project progress is consistent with that described in NorthStar's status reports.

NorthStar's required project Annual Financial Disclosures were received by their March 31 deadline and remain under PSD review. As of March 31, the projected cost to complete VY Decommissioning and License Termination is \$168 million, but the current value of the Nuclear Decommissioning Trust (NDT) is \$162.5 Million. The NDT is invested in US Treasury Bonds. The NDT value reflects the current worth of these bonds. If the bonds are held to maturity, as expected, their value will be sufficient to cover the current cost of decommissioning. PSD continues to monitor NDT values. Reviews of the Annual Disclosure and NorthStar's monthly reports thus far have not raised any causes for concern for completing the VY decommissioning project on schedule and within available funding.

• In Response to Panel Questions on VY Hazmat: Graham Bradley agreed to find out to what extent DEC reports on VY are publicly available. He will make VY reports available to the Panel in a manner consistent with previous practices. He also reported that, in general, Vermont hazmat standards are lower than Federal (EPA) standards. Vermont typically uses standards (concentration limits) determined for drinking water. Vermont's current standard for PFAS is 20 parts per trillion, which is below the current EPA standard of 70 parts per trillion. The EPA is working to reduce its standard. DEC would work through its groundwater monitoring / protection program to revise its standards if realignment with a new EPA standard were to become necessary.

In response to questions on the volume of non-radiological waste shipped from VY, Corey Daniels committed to include details on non-radiological waste disposal in future NorthStar updates to the Panel. Currently most waste from VT Yankee is shipped as either radiological waste or as mixed waste (which must be sent to Nuclear Regulatory Commission-approved facility).

No questions on the NorthStar or State Agency presentations were received during the Public Questions period. No public comments were received during the Early Public Comment Period.

#### Discussion of Federal Nuclear Waste Policy (FNWP) Committee Activities:

Lissa Weinmann, Chair of the Panel's Federal Nuclear Waste Policy Committee, briefly described the Committee's most recent activities. provided a verbal summary of recent Committee activities. The Committee continues to examine aspects of current and potential Federal nuclear wastes policies. To that end, the Committee hosted a meeting on March 6 in which two recognized subject experts, Jay Silberg and Diane Curran, provided perspectives on the 1982 Nuclear Waste Policy Act and the 1986 Amendments to this Act. The two experts discussed potential paths

forward; how the current Acts could be changed to move forward with nuclear waste policies. A recording of this meeting is available on the FNWP Committee webpage.

The Committee will meet on June 12 and June 19 to discuss spent nuclear fuel reprocessing / recycling options. Dr. Sven Bader of Orano will be the featured speaker at the June 12 meeting. Dr. Edwin Lyman of the Union of Concerned Scientists will be the featured speaker on June 19.

State Nuclear Engineer Tony Leshinskie added that, in response to Committee member discussion at the March 6 meeting, he compiled a list of spent nuclear fuel, nuclear decommissioning and nuclear power-related bills that have been introduced in recent Congressional sessions. (Details on this summary are available in Section X of this Annual Report.)

Near the end of the FNWP Committee report, Lissa Weinmann asked whether the Committee could offer an honorarium (nominal payment) to speakers invited to present at its meetings, and whether a vote could be taken on this subject this evening. She also asked whether the Per Diem for eligible Panel members could be increased to \$100.

Panel Chair Steve Skibniowsky indicated that while he was open to discussing honorariums and Panel expenses, this was new Panel business. After additional discussion, it was realized that these topics should have been brought up when the Agenda was reviewed shortly after the meeting's start. As such, he suggested that a vote on honorariums be a topic for the Panel's September meeting.

Public Service Commissioner June Tierney noted that honorarium and Per Diem questions were really a budget allocation issue. She suggested that the Panel create a budget for discussion at the September meeting. Panelists deserve a say in how Panel funds are to be used. She also suggested that the legislation that created the Panel (which includes discussion on Per Diems and the Panel's funding sources) be reviewed. (This Legislation is available from the Panel website at: <a href="https://publicservice.vermont.gov/document/2021-vt-legislation-revising-ndcap-composition-duties-and-funding.">https://publicservice.vermont.gov/document/2021-vt-legislation-revising-ndcap-composition-duties-and-funding.</a>)

The Panel agreed to discuss its budget at the September meeting. Steve Skibniowsky added that since he's received several requests to improve the Panel's outreach, he'd like to discuss this at the September meeting as well. He also asked that "New Panelist Orientation" materials be discussed too.

#### • Report of Spent Fuel Policies Principles Working Group:

State Nuclear Engineer Tony Leshinskie reported on several meetings he recently attended organized by several spent fuel policy stakeholders attempting to move Federal Spent Nuclear Fuel Policies forward. The group is mostly led by the San Onofre Decommissioning Citizens Engagement Panel, but it also includes several southern California local government officials, as well as several other local government officials, tribal representatives, and advocacy groups, such

as the Nuclear Waste Strategy Coalition, from across the US. Panelists from several other Citizen Advisory Panels (e.g., Pilgrim, Zion, Diablo Canyon) also attended the meetings. The initial meeting was a "one on one" with San Onofre Panel representatives that Panelists Steve Skibniowsky and Lissa Weinmann attended. Subsequent meetings were with the larger group. The formal name of the group is "Communities Seeking Solutions to the Spent Fuel Crisis."

The San Onofre Panel has started this push because the decommissioning San Onofre plant is located on land rented from the Camp Pendleton US Marine Corp Base. The Marines (and the Navy) have indicated that San Onofre's spent fuel cannot remain at the base once the remainder of the plant is decommissioned, meaning that the fuel will need to be moved somewhere. The San Onofre Panel leadership believes that reaching out to similar decommissioning panels across the US and other interested stakeholders is the best way to get movement on Federal spent fuel policies and siting a centralized spent fuel repository. Having multiple stakeholders from around the country calling for spent fuel policy actions will get more notice from Congress than one Panel from California will.

The Communities Group is developing a set of policy positions that it hopes that panels such as VT NDCAP will consider endorsing and presenting to their respective Congressional Delegations for action. While no policy positions have been publicly issued yet, the Group hopes to provide positions that call for:

- An autonomous organization for national spent fuel management
- Reliable and adequate funding for interim spent nuclear fuel storage
- Pursuit of multiple permanent repository sites
- Active engagement with state, local, and tribal governments on spent fuel policy issues

Two potentially divergent issues that the Communities Group hopes to publish policy positions on include:

- Including privately stored fuel in Federal ownership of spent nuclear fuel (i.e., Department of Energy takes title to fuel stored in private interim facilities and not just federal interim facilities)
- 284 •

• Clarification or redefinition of the linkage between interim and permanent spent fuel storage (i.e., can interim storage exist without a clear permanent disposal plan)

Mr. Leshinskie emphasized that the purpose of this summary was to give VT NDCAP a heads-up that these policy positions will likely become available soon. The Panel, or more likely its FNWP Committee, should review these positions, once available, for potential Panel endorsement.

General Public Comments: None were received during the Public Comment Period.

#### **September 19, 2023**

Similar to the Panel's May 8 meeting, the September 19 meeting largely consisted of reports from NorthStar and several State Agencies on recent VY decommissioning activities. Several Panel administrative items were also discussed.

#### • Panel Chair Status Discussion:

Due to the absence of Panel Chair Steve Skibniowsky, Panel Vice-Chair Lissa Weinmann chaired this meeting. It was noted that Steve Skibniowsky was undergoing treatment for a recently diagnosed cancerous tumor. While Mr. Skibniowsky hopes to continue to serve on the Panel, he needs to step down as Panel Chair. (It was noted that Mr. Skibniowsky has given permission to publicly discuss his health status.) State Nuclear Engineer Tony Leshinskie noted that under the legislation establishing the Panel and the Panel's Charter, Lissa Weinmann could serve as Acting Panel Chair for the remainder of the current Chair's term, which ends in December. Alternatively, the Panel could opt to hold an election for a new Chair this evening. Lissa Weinmann indicated that she was willing to continue as Acting Panel Chair for the remainder of the year but was also willing to have Steve Skibniowsky chair the Panel's December meeting if he was feeling up to it at the time.

After additional discussion, the Panel agreed to have Lissa Weinmann continue as Acting Chair for the remainder of the year. Elections for Panel Chair and Vice-Chair will be held at the December meeting, as originally planned.

#### • NorthStar Update on VY Site Decommissioning Activities:

NorthStar Panelist Corey Daniels summarized decommissioning activities completed since May 2023. (Slides for this presentation are available from the Panel's website.) It was noted that NorthStar has worked well over 1.6 million hours without an OSHA Recordable Lost Time Accident since starting VT Yankee's active decommissioning in January 2019. The NRC has issued no cited violations during this time. Additionally, the NRC completed a site security inspection during the week of September 11.

The project remains ahead of schedule. Progress on dismantling Reactor Building (RB) components and the active demolition of the Turbine Building (TB) was described. Components clearing in the RB to TB Steam Tunnel is underway; components clearing at the River Discharge Structure has completed. The downsizing and removal of the RB Torus structure are complete, as is removal of the concrete pads for the Condensate Storage Tank and the site's Spare Transformer. Clearing of below-grade piping between the Advanced Off-Gas Building Courtyard and the former Effluent Stack, as well as backfilling of the former Cooling Tower Basin were also described.

NorthStar is currently averaging 4 to 5 radioactive waste shipments per week. As of August 31, 148 radioactive waste shipments have occurred this year; 685 shipments have occurred since the

start of decommissioning. NorthStar continues to meet with State Agencies on a regular basis to discuss project status.

#### Department of Environmental Conservation (DEC) Update:

Graham Bradley, Hazardous Sites Manager in DEC's Waste Management and Prevention Division outlined the ANR / DEC's recent interactions with VY. (Slides for this presentation are available from the Panel's website.) Regular status calls, draft permit and corrective action plan reviews continue. Sampling programs for non-radiological contaminants continue to show no significant contamination issues at the VY site. No unexpected site contaminations have been identified thus far. ANR/DEC continues to work closely with NorthStar's remediation contractor, Haley & Aldrich, and DEC's consultant, Atlas, on plans for addressing potential contaminant issues at VY's previously identified Areas of Concern (AOCs). DEC's groundwater monitoring program remains suspended to avoid inadvertently destroying sampling wells during ongoing structure demolitions onsite. Groundwater monitoring will resume once onsite demolitions are complete. DEC continues to monitor onsite PFAS contaminations. PFAS levels of up to 57 parts per trillion have been observed onsite, which exceeds DEC's 20 parts per trillion limit. The observed PFAS level is similar to those seen at other industrial sites within Vermont.

Additionally, DEC recently completed reviews of VY's stormwater discharge program and VY plans for River Discharge Structure demolition.

#### • Public Service Department (PSD) Update:

PSD Special Counsel Eric Guzman outlined PSD's fiscal oversight of the VY Decommissioning project required by the MOU in effect as part of NorthStar's purchase of VY. Nick Capik of Four Points Group (FPG), PSD's consultants for overseeing the project, was also present to provide additional information, as needed. (Slides for this presentation are available from the Panel's website.) PSD's oversight includes receiving updates on work completed versus work remaining and project expenditures versus funds remaining. PSD coordinates with other State Agencies and FPG to assess project status and whether Nuclear Decommissioning Trust (NDT) reimbursement requests are consistent with the work completed. PSD also meets with NorthStar regularly to conduct any follow-up necessary on NorthStar's self-reporting. Regular site visits by FPG are conducted to observe completed work. The most recent visit was on June 26. Like previous site visits, the observed project progress was consistent with that described in NorthStar's status reports. An additional FPG site visit will occur in the upcoming weeks.

Updates on the Decommissioning and Site Restoration Trust Funds were provided. As of August 31, the projected cost to complete Decommissioning and License Termination is \$138.4 million, but the current value of the NDT is \$132.8 Million. The NDT is invested in US Treasury Bonds. The NDT value reflects the current worth of these bonds. If the bonds are held to maturity, as expected, their value will be sufficient to cover the current cost of decommissioning. PSD continues to monitor the fund values. Based on NorthStar's most recent monthly reports,

NorthStar continues to remain on track to complete the project on schedule and within available funding.

#### • Additional Agency Reports:

At the request of the Panel Vice-Chair, Panelist Dr. Bill Irwin, Vermont Radiological and Toxicology Sciences Chief, provided a verbal summary of current Department of Health oversite at Vermont Yankee. VT Health continues to meet NorthStar and other State Agencies on a regular basis to review progress on VT Yankee's decommissioning. Additionally, VT Health reviews all radioactive waste shipment notifications and the NRC's monitoring of onsite radiological conditions. VT Health continues to be pleased with the decommissioning work completed to date at VT Yankee

• **During Panel Questions**: Panelist David Eastman noted that he recently toured the VT Yankee site and thanked Panelist Corey Daniels for his assistance during this visit.

Acting Chair Lissa Weinmann had several follow-up questions on Bill Irwin's report VT Department of Health activities, including whether there was more onsite scrutiny in areas where tritium had been detected in 2010. She also asked about the status of Health's online VT Yankee surveillance reports, which do not appear to have been updated since 2019. No answers were provided to these questions since Bill Irwin had to drop off the webcast to attend a different meeting. Lissa said she would discuss these questions with Bill Irwin after the meeting.

#### Public Questions on NorthStar and State Agencies Reports:

With prior consent from the Acting Chair (Lissa Weinmann), Paul Blanch, a nuclear energy consultant from West Hartford, CT, made a brief presentation to the Panel. The slides for this presentation are available at on the Panel website in the "Meeting of September 18, 2023" section. The presentation provided details on several questions that Mr. Blanch has asked at meetings of the San Onofre Decommissioning Citizens Engagement Panel regarding long-term onsite spent nuclear fuel storage. Mr. Blanch's comments regarding VT NDCAP's functioning were complimentary ("running a good show"). His primary concerns from San Onofre observations include whether the spent fuel is being maintained in a retrievable condition and whether monitoring of the fuel is adequate. He also noted that some of these concerns are exacerbated by local conditions at San Onofre that are of much less concern at VT Yankee (e.g., the risk for flooding or chloride-induced corrosion and the lack of monitoring instrumentation on some of the cannisters).

A discussion of spent fuel storage requirements ensued between Mr. Blanch and Panelist Corey Daniels. Corey Daniels noted several points where he disagreed with Mr. Blanch's interpretations of spent fuel storage regulations.

Additional discussion on the spent fuel monitoring capabilities at VT Yankee ensued, which resulted in Vice-Chair Lissa Weinmann asking what measures were in place at VT Yankee to detect spent fuel cask leakage. Corey Daniels noted that the spent fuel monitoring partly relies on

leak checks that were conducted when the spent fuel cannisters were loaded. The cannisters are double sealed via welding. A breach in a double sealed cannister is regarded as a non-credible accident; to date, there is no known breach of any such sealed spent fuel cannister. Nonetheless, VT Yankee's spent fuel cannisters include temperature monitoring systems that are checked daily and are subjected to routine radiological monitoring. In response to an additional question from Paul Blanch, Corey Daniels indicated that this radiological monitoring includes occasional surveys of the dry cask vents.

In response to several questions from <u>Ann Darling</u> (Citizens Awareness Network), noted the following additional details regarding VY's decommissioning:

- VY's demolition concrete is sent to Waste Control Specialists (WCS) facilities in Andrews, TX since it has minor radiological contamination.
- Under agreement with the State of Vermont, the only VY concrete that will be used as onsite fill is from demolitions of the Cooling Towers and the River Discharge Structure.
- VY is not subject to the NRC's post-Fukushima probable maximum precipitation guidance since it ceased power generation prior to the publication of the guidance. VY works with Great River Hydro (owner of the several hydroelectric dams along the Connecticut River) to track expected river levels from flooding events. Historically, the worst observed flooding during VY's operation was from Hurricane Irene (August 2011). There was still about a 30-foot margin to onsite flooding at that time. It should be noted that access to VY could be impacted by area flooding if travel conditions near the site are impacted.

#### • Early General Public Comments:

Rebecca Ellis from US Senator Peter Welch's (D-VT) Office introduced herself to the Panel and noted that she would be following nuclear decommissioning-related issues for the Senator. She briefly described her previous experience, noting that she had once served as a Deputy Commissioner for the VT Department of Environmental Conservation. She invited Panelists and members of the public to reach out to her if they have questions concerning Vermont Yankee's decommissioning.

Acting Chair Lissa Weinmann asked whether Senator Welch intended to reintroduce any of the several decommissioning policy-related bills that had been proposed in recent Congresses. Ms. Ellis indicated that she would check and get back to the Panel. Acting Chair Weinmann also reported that Congresswoman Becca Balint (D, VT-AT) has joined the US Congressional Spent Nuclear Fuel Solutions Caucus.

 Panelist Chris Campany noted that the Statute establishing the Panel will need to be revisited once active decommissioning is complete. State Nuclear Engineer Tony Leshinskie added that the Yankee Rowe Spent Fuel Storage Facility's Community Advisory Panel could serve as a model for VT NDCAP once VY's active decommissioning is complete.

#### • Discussion of Federal Nuclear Waste Policy (FNWP) Committee Activities:

Lissa Weinmann, Chair of the Panel's Federal Nuclear Waste Policy Committee, briefly described the Committee's most recent activities. The Committee continues to examine aspects of current and potential Federal nuclear wastes policies. To that end, the Committee hosted two meetings in June that discussed potential spent nuclear fuel reprocessing policies. Dr. Sven Bader of Orano spoke at a June 12 meeting outlining potential reprocessing technologies. Dr. Edwin Lyman from the Union of Concerned Scientists spoke at a June 19 meeting outlining policy issues that reprocessing potentially raises. Recordings of these meetings are available on the FNWP Committee webpage.

The Committee will hold its next meeting (webcast) on September 25 at which several US Department of Energy officials will discuss the status of spent fuel transportation planning.

#### • Potential Panel Budget Expenditures:

State Nuclear Engineer Tony Leshinskie briefly outlined a preliminary budget he compiled for Panel expenditures, up to a \$35,000 cap, in the current fiscal year. (A copy of this budget is available from the Panel's website in the "Meeting of September 18, 2023 section.)

The preliminary budget includes estimates for meeting logistics items such as BCTV recording and webcast hosting expenses, per diems for eligible panelists, and potential physical meeting space rentals. Line items for several previously proposed Panel expenses such as a dedicated Panel staff member (a contractor) and a potential website refresh by an outside consultant are also included. Several allocations for potential "Panel Education" expenses are also included.

After a brief discussion, the Panel agreed to eliminate budget items for meeting space rentals and meeting space infrastructure since Panel meetings through June 2024 will likely remain virtual. The "Panel Education" line items generated significant discussion.

Panelists June Tierney and Lissa Weinmann related a budgetary decision from early June. Lissa requested Panel funding to register for and attend the National Radioactive Waste Summit in Nevada later that month. The decision on this request was hampered by the fact that the Panel does not have an established procedure for approving such expenses. Ultimately, the request was approved (since sufficient budget remained available) under the condition that Lissa would report back to the Panel on what she had learned at the Summit. It was also noted that due to a last-minute conflict, Lissa was unable to attend the Summit. Her paid registration fee has been applied to registering for the 2024 Summit.

Commissioner Tierney urged the Panel to develop a policy for approving Panel expenditure requests. Currently she has no guidance on what constitutes reasonable Panel expenses, particularly for potential Panel travel. She suggested that such guidance encourage online attendance for conferences whenever possible. Budget funds can be exhausted quickly by travel.

She also suggested that the Panel guidance / policy require that the attending Panelist provide a report to the Panel on what was learned.

<u>Panelist Emily Davis</u> provided insights on the several previously proposed expenditures since she developed earlier Panel budget drafts. Determining what constituted appropriate Panel Education expenses generated significant discussion previously, but no decisions were made at the time. An approval process for such Panel expenses is needed. Perhaps this could simply be several bullet points to outline a policy?

Commissioner Tierney suggested that the Panel think about policy bullets for self-governance – what is the Panel comfortable with for policies? Should Panel Education and similar expenses require approval from a committee or the whole Panel?

After additional discussion, Lissa Weinmann stated that she would make the email thread between Commissioner Tierney and her for the Radwaste Summit approval available to Panelists as an example of a potential expense approval process. A consensus was reached that the draft budget should be reexamined to eliminate items that are no longer a priority and flesh out expenditure categories for the current budget. Panelists Emily Davis and David Eastman volunteered to help reexamine the budget and to make a first attempt at several expense approval policy points.

Ann Darling (Citizens Awareness Network, Easthampton, MA) commented that she was disappointed that the Panel's budget discussion did not include funding for enhancing the Panel's public outreach. Several Panel members asked for clarification on what enhanced outreach meant. Ms. Darling noted that if the Panel website is going to be the Panel's primary outreach tool, more needs to be done to promote public awareness of the website. She also suggested that the Panel consider holding public forums.

Lissa Weinmann indicated that as Acting Chair, she would participate in the policy drafting and budget examination process. She will follow up Emily, David, and Tony Leshinskie to work on these items, with the intent of having a revised budget draft and policy guidance items available for Panel approval at the December 11 meeting.

#### • Potential Future Panel Meeting Topics:

State Nuclear Engineer Tony Leshinskie explained that this discussion item was specifically requested by Panel Chair Steve Skibniowsky. Panelist Bob Leach recently asked Steve whether the Panel could discuss Small Modular Reactors as a potential repurposing of the VT Yankee site. Steve was open to such a discussion provided some other Panel members were also interested. Tony's suggestion to Steve was to ask the Panel whether there were specific topics that they wanted discussed at future meetings, either as part of a regular meeting agenda or a meeting dedicated to a specific topic.

Several suggestions were made including a discussion outlining do's and don'ts in webcasts under Vermont Open Meeting Law. A similar topic on handling offline communications with respect to Open Meeting Law was also suggested. Commissioner Tierney suggested a meeting exploring what improved public outreach meant. Lissa Weinmann requested that additional meeting topics could be emailed to her. Suggestions from the public could be sent to the Panel's email address (PSD.NDCAP@vermont.gov).

• **General Public Comments:** The Panel was thanked for tonight's discussions on improving public outreach.

#### **December 11, 2023**

In addition to receiving reports from NorthStar, DEC and PSD on recent VY decommissioning activities, the Panel received reports from Vermont Department of Health and the US NRC on radiological monitoring programs at VY. The Panel's 2024 Budget and Educational Expense Protocol were finalized and adopted. The Panel's Annual Report was finalized and Election of Officers were conducted. With 12 Panelists in attendance at the start of the meeting, a quorum (9 Panelists required) was present throughout the meeting.

**Nuclear Regulatory Commission Overview of Radiological Monitoring at VY:** 

NorthStar Panelist Corey Daniels summarized decommissioning activities completed since

September 2022. (Slides for this presentation are available from the Panel's website.) It was noted that NorthStar has worked over 1.4 million hours without an OSHA Recordable Lost Time

Accident since starting VT Yankee's active decommissioning in January 2019. The NRC has issued

no cited violations during this time. Progress on dismantling Reactor Building (RB) components

and the demolition of other onsite structures was described. Reactor Vessel (RV) segmentation

has completed. Current RB dismantling efforts are focused on removing Recirculating Water

System (RWS) components. Downsizing and removal of the RB Torus structure continues;

• VT Department of Health Radiological Monitoring Program at VY:

**NorthStar Update on VY Site Decommissioning Activities:** 

roughly one-sixteenth of the entire structure has been removed.

Demolition of the Control Block Building (which housed the Control and Computer Rooms) and the Containment Access Building has completed. Demolition of the Reactor Building Airlock is nearing completion. Current decommissioning work in the Turbine Building consists of cable

clearing, which will continue for several more months. Essentially, the Reactor and Turbine Buildings are the only structures from the operating plant that are still standing.

On October 19, VY's Greater-Than-Class C (GTCC) low level radioactive waste was moved to the ISFSI. The GTCC waste consists of several highly contaminated VY Reactor Vessel (RV) internal components which had been stored temporarily in VY's Spent Fuel Pool following their removal from the RV. The GTCC waste is stored in a Non-Fuel Waste Container, which is similar in design to the dry casks storing VY's spent nuclear fuel.

Confirmatory radiological surveys at the Cooling Towers site were conducted during the week of November 14 by an independent contractor (Oak Ridge Institute for Science and Education). The monorail system in the new accessway between the Reactor and Turbine Buildings is fully operational. Orano's work on the VY decommissioning project has completed.

#### Department of Environmental Conservation (DEC) Update:

Graham Bradley, Hazardous Sites Manager in DEC's Waste Management and Prevention Division outlined the Agency of Natural Resources (ANR) / DEC's recent interactions with VY. (Slides for this presentation are available from the Panel's website.) Regular status calls, draft permit and corrective action plan reviews continue. Sampling programs for non-radiological contaminants continue to show no significant contamination issues at the VY site. No unexpected site contaminations have been identified thus far. ANR/DEC continues to work closely with NorthStar's remediation contractor, Haley & Aldrich, and DEC's consultant, Atlas, on plans for addressing potential contaminant issues at VY's previously identified Areas of Concern (AOCs). DEC is closely following the remediation of the drain lines for the VY's abandoned onsite Chemistry Lab.

Due to ongoing structure demolitions onsite, DEC's groundwater monitoring program has suspended to avoid inadvertently destroying sampling wells. The monitoring program has collected well over three years of data without identifying new causes for concern. Minor PFAS (per- and polyfluoroalkyl substances) and Volatile Organic Compounds (VOCs) contaminations have been identified onsite but are not expected to be a significant issue. DEC will continue to work with NorthStar on developing the post-demolition groundwater monitoring plan.

#### Public Service Department (PSD) Update:

Eric Guzman, PSD Special Counsel outlined PSD's fiscal oversight of the VY Decommissioning project required by the Memorandum of Understanding (MOU) in effect as part of NorthStar's purchase of VY. Nick Capik of Four Points Group (FPG), PSD's consultants for overseeing the project, was present to provide additional information, as needed. (Slides for this presentation are available from the Panel's website.) PSD's financial and technical oversight role was outlined similarly to the report provided at the May and September Panel meetings. Regular site visits by FPG are conducted to observe completed work. The most recent visit was on September 29. The observed project progress was consistent with that described in NorthStar's most recent status reports.

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Updates on the Decommissioning and Site Restoration Trust Funds were provided. As of 629 630

November 30, the projected cost to complete Decommissioning and License Termination is \$190

million, but the current value of the Nuclear Decommissioning Trust (NDT) is \$188.3 Million. The

NDT is invested in US Treasury Bonds. The NDT value reflects the current worth of these bonds.

If the bonds are held to maturity, which is usually the case, their value will be \$193.3 million,

which is sufficient to cover the current cost of decommissioning. PSD will continue to monitor the 634 635

fund values. Overall, NorthStar remains on track to complete the project on schedule with the

down to Class C waste levels within our lifetimes. Eric Guzman reiterated that, despite recent

VY's decommissioning, provided that the Bonds are held to maturity. The Public Service

Department will continue to closely track fund values and decommissioning costs.

efforts underway that would allow transportation of GTCC waste.

Panel 2024 Budget and Educational Expense Protocol:

drops in US Treasury Bond values, VY's decommissioning funds remained sufficient to complete

underground pipes could be left in place. This can only be done if the pipes are held in a stable

comply with site release criteria. It was also reported that there were currently no legislative

**In the Early General Public Comments:** The Panel was asked to continue work on

The current draft of the Panel's 2023 Annual Report to the Legislature, authored by State Nuclear

Engineer Tony Leshinskie, was reviewed. Actions for finalizing the report by its January 15, 2024

**Election of New Panel Officers:** In separate votes, Steve Skibniowsky was elected Panel

due date were determined. The report was unanimously approved, subject to implementing the

Chair and Lissa Weinmann was elected Panel Vice-Chair for terms of 1 year. The Panel thanked

condition, e.g., encased in concrete, with radiological and hazmat surveys demonstrating that they

**During Panel Questions**: Corey Daniels indicated that VY's GTCC waste would not decay

In response to questions from the Public: Corey Daniels outlined conditions for which

currently available funding.

improving its public outreach.

authorized changes.

**Draft Annual Report for 2023:** 

Emily Davis her service as Panel Chair in 2022.

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1/3 Site Decommissioning Activities resume following Holiday Break

IV. Major Milestones and Activities at the Vermont Yankee Site

*DRAFT VERSION as of 12/07/2023* 

- 1/3 Draining & decontamination of Spent Fuel Pool (SFP) resumes; components clearing in RB Corner Rooms dismantling & Torus structure demolition resume; Turbine Building (TB) piping and equipment removals resume; TB Chemistry Lab hazmat remediation resumes; Piping removals from Advanced Off-Gas (AOG) Building courtyard resume;
   Radioactive waste shipments via railcars resume
- 1/9 Clearing of abandoned Refueling Floor systems components begins; TB Chemistry
  Lab hazmat remediation completed; Two TB 280 kV transformers sold for reuse at
  another site; Demolition of Security Gatehouse #3 (near River Discharge Structure)
  completed; Onsite asbestos abatement underway, where practical
  - 1/16 Cutting for a new RB equipment and personnel access point in the RB High -Pressure Coolant Injection (northeast) Corner Room begins; Asbestos abatement in the TB to AOG Building tunnel begins; Debris clearing from Gatehouse #3 demolition completed
  - 1/30 Final draining of Spent Fuel Pool suspended to prioritize other decommission tasks
- 1/30 TB Chemistry Lab piping removals begin

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- 683 2/6 Construction of new Radiation Protection (RP) Checkpoint (personnel access point)
   684 in RB High-Pressure Coolant Injection (northeast) Corner Room begins; Radiological
   685 surveys in prep for TB demolition begin; TB Chemistry Lab piping removals completed
  - 2/6 Service Water and Circulating Water Pump Motors downsized for offsite disposal
- 2/13 TB epoxy flooring removals begin; TB basement drain pipes removal begins;
   688 Service Water and Circulating Water Pump Motors downsizing completed
- 2/13 First Nuclear Regulatory Commission (NRC) onsite inspection of the year occurs (2/13 through 2/16)
- 4 2/20 TB epoxy flooring removals completed; Radiological surveys for TB demolition
   692 completed; Emergency Diesel Generators demolition begins; Turbine Rotor downsizing
   693 begins
  - 2/22 NRC Second Half 2022 Inspection Exit Meeting no reported issues, findings, or violations
- 4 2/27 Turbine Deck Shielding (Block) Walls removal begins; TB Steam Pipe Raceway
   697 decontamination begins; Removal of external TB green metal wall panels begins
- 3/3 TB Steam Pipe Raceway decontamination complete
- 3/17 Asbestos abatement on the RB 318-foot level complete
- 3/22 Construction of new Radiation Protection (RP) Checkpoint (personnel access point)
   in RB High-Pressure Coolant Injection (northeast) Corner Room complete; New RP
   Checkpoint activated
- 3/25 New NRC Project Managers for VY Decommissioning announced
  - 3/27 Start-Up Transformers demolition begins
- 3/30 NorthStar files required Annual VY Decommissioning Trust Fund & Spent Fuel
   Management Fund reports
- 4/3 Turbine Stator downsizing begins; TB roofing material removal begins;
   Start-Up Transformers demolition complete; Asbestos abatement in AOG Building courtyard trenches complete
- 4/3 Second NRC onsite inspection of the year occurs (4/3 through 4/6)

- 4/4 New NRC Project Managers for VY Decommissioning visit site
- 4/10 Removal of external TB green metal wall panels complete; Removal of underlying TB
   gray metal wall panels begins
- 4/14 Turbine Deck Shielding (Block) Walls removal complete
- 5/8 Annual site roadway assessment completed (required by Town of Vernon)
- 5/8 RB to TB Steam Tunnel electrical components removal begins; TB gray wall panel
   radiological surveys begin; Initial Turbine Stator downsizing complete
- 5/15 Turbine Stator moved to TB Loading Bay for additional downsizing; Removal of below
   grade components near former Effluent Stack site begins; soil stabilization & grass
   seeding at Interim Off-Gas (IOG) System site begins
- 5/21 Radwaste packaging activities in TB moved to adjacent "Big Top" structure
   (TB demolition prep)
- 5/26 TB wall panel radiological surveys complete; removal of remaining wall panels
   from TB superstructure begins; Radiological surveys at River Discharge Structure
   begin
- 6/5 Third NRC onsite inspection of the year occurs (6/5 through 6/8)
- 6/12 Resealing of RB wall cut for former Materials Transfer "monorail" (between RB & TB lower levels), for RB Ventilation System integrity, begins
- 6/19 TB roofing material removal complete; Removal of all remaining components from
   TB Roof begins
- 6/22 Third-Party Quality Assurance Audit of VY Procedures completed; no significant issues identified
- 6/26 Removal of components on TB Roof completed; Demolition of TB Roof begins;
   Scrapping of TB Crane begins; Downsizing of Turbine Stator complete
- 6/29 Torus structure demolition complete; Torus piping removals begin
- 6/29 1.6 million working hours without an OSHA recordable injury at VY celebrated
- 737 7/5 Effluent Stack piping removals begin
- 738 7/6 Emergency Diesel Generators demolition complete;
- 7/10 TB Crane removed from TB; Crane components segmentation begins; Dismantling of
   High Pressure Coolant Injection (HPCI) and Residual Heat Removal (RHR) Systems
   underway; RB to TB Steam Tunnel mechanical components removal begins; TB lube oil
   tank demolition begins; TB steel superstructure demolition begins
- 7/14 TB Crane components segmentation complete; TB lube oil tank demolition complete
- 7/24 Radiological surveys along Effluent Stack piping route begins
- 7/27 TB roof and steel superstructure demolitions complete
- 8/2 NRC First Half 2023 Inspection Exit Meeting no reported issues, findings, or violations
- 8/7 Rerouting stormwater discharge (away from River Discharge Structure) begins
- 8/14 Fourth NRC onsite inspection of the year occurs (8/14 through 8/17)
- 750 8/22 Demolition of concrete portion of TB begins
- 8/25 Effluent Stack piping removals complete

753 9/5 River Intake Structure Components removal underway 754 Radiological surveys along Effluent Stack piping route complete 9/8 9/22 River Intake Structure Components removal complete 755 Onsite Radiological Emergency Drill conducted 756 9/26 757 10/5 Demolition of concrete portion of TB complete 758 10/10 NorthStar conducts Media Day at VY Site 759 10/10 Fifth NRC onsite inspection of the year occurs (10/10 through 10/12) 760 10/12 Demolition of last onsite 115-kV transmission tower complete 761 10/13 VT Yankee Reactor License Termination Plan (LTP) submitted to NRC 10/16 Draining of remaining Spent Fuel Pool water resumes; Demolition of SFP-related 762 763 systems begins 10/27 Spent Fuel Pool drained; Last SFP water shipment leaves VY site; Residual Heat 764 765 Removal (RHR) System demolition complete 766 10/30 Radiological surveys in Off-Gas Systems trenches complete 767 11/3 Rerouting stormwater discharge away from River Discharge Structure complete 768 11/20 Construction of RB exterior ramp (to facilitate RB demolition) using TB concrete 769 rubble begins 770 11/20 AOG Building Foundation demolition begins 771 12/1 Spent Fuel Pool Cooling System components removed from site 772 12/11 Sixth NRC onsite inspection of the year occurs (12/11 through 12/14) • 12/?? Additional milestone(s) here 773 774 775

### V. Nuclear Decommissioning Trust (NDT) and Site Restoration Trust (SRT) Fund Updates (Based on latest available data for 2023).

781	NDT	SRT
782	\$180.2 M Balance on December 31, 2022	\$51.2 M Balance on December 31, 2022
783	\$162.5 M Balance on March 31, 2023	\$51.3 M Balance on March 31, 2023
784	\$138.2 M Balance on June 30, 2023	\$50.6 M Balance on June 30, 2023
785	\$XXX.X M Balance on September 30, 2023	\$XX.X M Balance on September 30, 2023
786	\$ <mark>XXX.X</mark> M Balance on October 31, 2023	\$ <mark>XX.X</mark> M Balance on October 31, 2023
787	\$XXX.X M Balance on December 31, 2023	\$XX.X M Balance on December 31, 2023

789 Monthly balances for the NDT and SRT are available at:

790 <a href="https://publicservice.vermont.gov/public-advocacy/vermont-yankee-decommissioning/trust-791">https://publicservice.vermont.gov/public-advocacy/vermont-yankee-decommissioning/trust-791</a>
<a href="mailto:balances.">balances.</a>

Summaries of monthly expenditures for the Vermont Yankee Decommissioning Project are available: <a href="https://publicservice.vermont.gov/public-advocacy/vermont-yankee-decommissioning/public-reports">https://publicservice.vermont.gov/public-advocacy/vermont-yankee-decommissioning/public-reports</a>

#### VI. Spent Nuclear Fuel Status at Vermont Yankee

The last of VY's spent fuel inventory was transferred to dry cask storage on August 1, 2018. The VY Independent Spent Fuel Storage Installation (ISFSI) consists of a total of 3,880 spent fuel assemblies (used over the course of VY's 42 years of power generation) contained in 58 dry casks. No changes in the configuration of VY's dry casks have occurred since the placement of the last spent fuel dry case in 2018. However, on October 19, 2022, an additional (59th) dry cask containing VY's Greater-Than-Class C (GTCC) low level radioactive waste was added to the ISFSI. (This GTCC waste consists of several highly contaminated VY Reactor Vessel internal components which had been stored temporarily in VY's Spent Fuel Pool following their removal from the RV.) With this move, all VY GTCC waste resides at the VY ISFSI. VY's spent fuel will remain at the VY ISFSI until the US Department of Energy fulfills its obligation to provide a national spent nuclear fuel repository. VY's GTCC waste will remain at the VY ISFSI until a US radioactive waste disposal facility is licensed to accept GTCC waste.

 A total of 6 vacant cask spaces remain on VY's ISFSI pads. Four of these are required should the arrangement of the dry casks on the two ISFSI pads need to be changed for any reason. The remaining two spaces were designated for storing additional VY GTCC Low Level Radioactive Waste. Early (circa 2014) GTCC volume estimates suggested that VY could require as many as three GTCC waste casks. More refined estimates (circa 2018 and later) determined that only one GTCC waste cask would be necessary.

#### VII. Significant Vermont Yankee Site Changes

- 820 Monitoring of the Vermont Yankee Spent Nuclear Fuel is controlled from the site's Central Alarm
- Station (CAS) Building, which became operational on August 23, 2018. No significant changes to
- Vermont Yankee's spent fuel monitoring programs occurred during 2023. All Vermont Yankee
- site changes occurring in 2023 resulted from the continuation of decommissioning activities
- which commenced on January 11, 2019.

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- The following onsite structures were demolished during 2023:
  - Above grade portions of the Turbine Building
    - Below grade portions of the Interim Off-Gas and Advanced Off-Gas Systems
    - River Intake & Discharge Structure major components (structures themselves remain)
    - Abandoned security structures & barricades (none of which impact the VY ISFSI)
    - Last onsite 115-kV Transmission Tower

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Segmentation and removal of the Reactor Vessel was completed in October 2022. RB demolition efforts continue to remove the remaining abandoned reactor systems components, piping, conduit, and non-loadbearing walls within its interior. Similar component removals will continue throughout most of 2024.

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The demolition of the above grade portions of the Turbine Building has resulted in another significant change in onsite building access. Personnel access into the Reactor Building is now through a new doorway cut into the northeast corner of the Reactor Building. Radiation Protection Checkpoint functions are performed in Gatehouse #2 (as was implemented in 2022) and in a recently placed Sea-Land container adjacent to the new RB doorway.

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The concrete pad for the previously demolished Shipping and Receiving Warehouse remains in place. Removal of the Advanced Off-Gas (AOG) Building concrete pad commenced in mid-November.

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No significant onsite road repairs were required this year. Maintenance for the onsite rail spur occurred on an as needed basis but did not impact radioactive waste and debris shipments to offsite facilities.

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#### VIII. Vermont Yankee Water Management Program

- Rainfall at the VY site during 2023 resembled the higher rainfall totals observed in 2021.
   Accordingly, the rate of groundwater entering the Turbine Building in 2022 is similar to rates seen in 2018 through 2020.
  - o In leakage rates ranged between 200 and 700 gallons per day in 2022
  - At End of Year, the rate was under 300 gallons per day (similar to previous end of year rates).
  - o In leakage remains below rates initially seen in 2015

 Roughly 434,400 gallons of in-leakage water have shipped in 2022 860 All VT Yankee water shipments were sent to Waste Control Specialists' (WCS) NRC-861 licensed disposal site in Andrews County, Texas during 2022. 862 863 No water has shipped to US Ecology's hazardous waste disposal facility in Grandview, Idaho, even though Vermont Yankee received NRC approval in 2021 to 864 ship up to 2,000,000 gallons of contaminated water to this facility. Vermont Yankee 865 866 was previously allowed to ship a total 200,000 gallons of contaminated water to this facility during 2019 and 2020. 867 o 20 in-leakage water shipments occurred in 2022, all shipments made were via 868 tanker rail cars. 869 Each in-leakage water shipment contained no more than 0.004 Curies of radioactive 870 871 material Groundwater shipments to WCS facilities continue "as-needed." 872 A total of 2,143,400 gallons of in-leakage water have been shipped to date 873 The system of water diversion wells installed in 2020 along the Turbine Building periphery 874 to mitigate future water shipments remains in use. However, this system does not address 875 all potential intrusion water sources. Diverted, uncontaminated water is discharged to the 876 877 Connecticut River on an as-needed basis. Each discharge is limited to  $\sim 15,000$  gallons per 878 879 VY completed shipping a roughly 900,000 gallon inventory of contaminated Process Water (water from abandoned VY systems) previously stored in the Suppression System Torus to 880 WCS facilities. Shipments of this inventory began in 2021. 881 882 883 30 shipments (~633,700 gallons) shipped in 2022 During 2022, VY also shipped most of a 288,000 gallon contaminated water inventory 884 previously used in the Spent Fuel Pool to WCS facilities. This is the last Process Water 885 inventory at the site. 886 887  $\circ$  9 shipments (~207,000 gallons) shipped in 2022 888 889 Each Process Water shipment contained between 0.065 and 0.1 Curies of 890 radioactive material 891 892 IX. Decommissioning Waste Shipments Summary 893 A summary of radiological and hazardous waste shipments made from the Vermont Yankee site 894 during 2023 follows. 895 896 **IX.A Radioactive Waste Shipments Summary** 897 898 An annual summary of Vermont Yankee's radioactive waste shipments is published in mid-May 899 of the following calendar year as part of the "Radioactive Effluent Release Report" filed with the 900 US Nuclear Regulatory Commission and the Vermont Public Service Department. Preliminary 901 radioactive waste volume data available as of December XX, 2023 indicates that approximately 293,900 cubic feet of radioactive waste was shipped from the Vermont Yankee site during 2023 902

(somewhat less than the ~380,000 cubic feet shipped in 2021). The total weight of the waste shipped in 2022 exceeds 19,500,000 pounds (>9,700 tons). The total radiological activity of the shipped waste is 7500 Curies (significantly lower than the 27,460 Curies shipped in 2021, but well up from 522.8 Curies and 126,8 Curies shipped in 2020 and 2019, respectively). All radioactive waste shipments in 2022 were sent to Waste Control Specialists' (WCS) disposal facility Andrews County, Texas. 122 radioactive waste shipments were made in 2022; 111 of these were made via railcar. The remaining 11 shipments were made by truck. Over 500 radioactive waste shipments have occurred since the start VY's active decommissioning in 2019.

Based on data provided by NorthStar in response to Panel questions in April 2021, the total activity of radioactive waste stored at the VT Yankee site is estimated as follows:

• Total activity stored at the VY Independent Spent Fuel Storage Installation (ISFSI), consisting of 3880 spent fuel bundles stored in 58 spent fuel cannisters: 117,176,000 Curies (roughly 2,054,000 Curies per cannister)

• The Greater Than Class C radioactive waste cask stored on the VY ISFSI since October 2022 contains approximately 175,000 Curies.

#### **IX.B Hazardous Waste Shipments Summary**

- 107 cubic yards of asbestos was shipped to the following facility:

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• 1,596,310 pounds of ferrous and non-ferrous scrap metal was shipped to the following facilities for recycling:

 Mattuchio Scrap Metal, Everett, MA
 Minichiello Brothers Inc., Lowell, MA

o Minerva Landfill, Waynesburg, OH

#### X. Vermont Congressional Delegation

While Vermont Congressional Delegation Staff did not make formal presentations at any NDCAP Full Panel or NDCAP Federal Nuclear Waste Policy Committee meetings during 2023, Staff from Senator Bernie Sanders' and Senator Peter Welch's Offices have kept Panel Leadership apprised of DOE and NRC activities and publications of potential interest to the Panel. Most of these communications came from Ms. Rebecca Ellis of Senator Welch's Office, with Ms. Haley Pero of Senator Sanders' Office providing several additional communications.

At the Panel's September 18 meeting, Ms. Ellis invited Panelists and members of the public to reach out to her if they have questions concerning Vermont Yankee's decommissioning.

Congresswoman Becca Balint's Office remained in contact with Panel Leadership (particularly Vice-Chair Weinmann) throughout 2023. In early 2023, Congresswoman Balint joined the Congressional Spent Nuclear Fuel Solutions Caucus, which NDCAP's FNWP Committee previously discussed at its October 3, 2022 meeting.

In response to discussion at the March 6 FNWP Committee meeting, State Nuclear Engineer Tony Leshinskie compiled a list of spent nuclear, nuclear decommissioning and nuclear power-related bills that have been introduced in recent Congressional sessions. This compilation is available at:

953 at:

https://publicservice.vermont.gov/document/status-decommissioning-spent-fuel-policy-bills-congress

Several bills introduced in previous Congresses (many of which were sponsored by Vermont's Congressional Delegation) that NDCAP had previously discussed at length have yet to be reintroduced into the current (118th) Congress, even though they had been introduced in the past several (e.g., the 116th and 117th) Congresses. Nuclear power industry-related bills introduced thus far in the 118th Congress are primarily focused on prohibiting the use of Russian Uranium as part of the US domestic nuclear fuel supply and limiting Russian access to US nuclear industry technology. However, the Nuclear Waste Informed Consent Act has been introduced to both the US House and Senate. This bill would require the Department of Energy to obtain consent from host local and state governments before Nuclear Waste Fund expenditures for constructing a nuclear waste repository could begin.

#### 975 **XI. Current NDCAP Committees** 976 977 **XI.A NDCAP Issues Committee** 978 979 The Issues Committee, formed in 2015 and reconstituted in 2019, is intended to provide 980 recommendations for topics to be discussed at meetings of the Full Panel. The Issues Committee 981 did not meet during 2023. For 2023, the Issues Committee's function (selection of meeting 982 topics) was performed by the Full Panel at its regular meetings, with additional interactions 983 between the Panel Chair, the Panel Vice-Chair, and the State Nuclear Engineer as needed. 984 985 **XI.B NDCAP Federal Nuclear Waste Policy Committee** 986 987 NDCAP created the Federal Nuclear Waste Policy Committee in December 2020 as a means for 988 the Panel to learn more about US national spent nuclear fuel storage and disposal issues. The 989 Committee is developing recommendations on US nuclear waste policies for the Full Panel to 990 consider as potential Advisory Opinions on these subjects. The Committee consists of the 991 following Panel members: Lissa Weinmann (Committee Chair), Corey Daniels, Maddy Arms, Marvin Resnikoff, and David Eastman. The Committee is administered by State Nuclear Engineer 992 Tony Leshinskie. 993 994 995 The Committee met 5 times in 2023, all via Teams webcast, to learn more about current US national spent nuclear fuel storage and disposal policies. Most of the Committee's 2023 996 meetings included guest speakers from individual nuclear waste policy stakeholders. Brief 997 998 summaries for each meeting are included below. The Committee continued to compile a reading 999 list of relevant materials. This list is available at the Committee's webpage at: 1000 https://publicservice.vermont.gov/public-advocacy/vermont-yankee-decommissioning/vt-1001 ndcap-federal-nuclear-waste-policy 1002 1003 This webpage also includes recordings of the individual Committee meetings. 1004 1005 Through the course of 2023, the Committee built on its prior work in 2021 and 2022. A 1006 summary of this earlier work is available from the Committee archive webpages at: 1007 1008 2021 Archive: 1009 https://publicservice.vermont.gov/public-advocacy/vermont-yankee-decommissioning/vt-1010 ndcap-federal-nuclear-waste-policy/2021-fnwp 1011 2022 Archive: 1012 1013 https://publicservice.vermont.gov/2022-fnwp-committee-meeting-archives

Annual Reports.

\*\*DRAFT VERSION as of 12/07/2023\*\*

Additional summaries of the Committee's prior work are available in 2021 and 2022 Panel

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#### March 6, 2023 Committee Meeting

At this meeting, the Committee heard two perspectives on Amending the 1982 & 1986 Nuclear Waste Policy Acts (NWPAs). These perspectives were provided by Jay E. Silberg, a Partner at Pillsbury, Winthrop, Shaw, Pittman, LLP and Diane Curran, a Partner at Harmon, Curran, Spielberg and Eisenberg, LLP, both of whom have worked on US nuclear policy issues throughout their careers. Speaker biographies (see links with the speakers' names above) and background information for this discussion may be found in the "March 6, 2023" materials section on the Committee webpage. A recording of these presentations is available at: https://youtu.be/6vrNhv1kQJM.

Mr. Silberg noted that virtually all the proposed solutions for nuclear waste disposal have been around since the 1970s. It was his hope that passage of the Nuclear Waste Policy Act (NWPA) would move one of these proposals forward, but instead policies have remained on a "merry-goround" with policies favored by one Administration becoming more likely options only to have the preferred policies change once a new Administration takes charge. As early as the late 1950s, expert organizations such as the National Academy of Sciences recognized that the most viable long-term solution to nuclear waste disposal was a deep geologic repository. Regardless, this did not result in an established national repository. The Energy Reorganization Act of 1974, which created the NRC, turned nuclear waste disposal attention to Interim Storage (which was called "Away from Reactor Storage" at the time). Focus returned to creating a national repository when the NWPA was passed in 1982. However, none of the programs established by the NWPA are up and running (even though they were supposed to be). A key point that Mr. Silberg made was that a firm direction that cannot be changed by a subsequent Administration, with well-defined schedules and funding mechanisms, must be established for there to be any significant progress on a National Nuclear Waste Policy and a disposal facility.

Mr. Silberg added that, currently, DOE's Consent-Based Siting Program is the only Federal nuclear waste-related policy moving forward. Additional policy direction is needed simply because nuclear power technology is not going away. Energy policy changes in response to Climate Change all point to increased reliance on nuclear power both internationally and within the United States.

Diane Curran (who is currently litigating against the NRC's recently granted license for Holtec to operate a Consolidated Interims Spent Fuel Storage Facility in New Mexico) identified several legal concerns related to environmental justice and legal equality issues that nuclear waste policy proposals present. She noted the creation of the Congressional Spent Nuclear Fuel Solutions Caucus in 2022 and that she is following the Caucus' efforts to determine an equitable solution to spent fuel disposal.

Diane Curran indicated that the major issue that many nuclear waste policy proposals put forward is inequality. In selecting isolated communities that often have minimal political pull, the NRC and DOE are essentially "picking winners and losers" in the NWPA debate. The proposed host communities and those along spent fuel transportation corridors will be living with long-term hazardous waste while frequently not benefiting from the electricity that this waste once produced.

Ms. Curran added that Spent Fuel Interim Storage brings additional concerns in that more communities are potential waste storage hosts (rather than the several identified in the deep geologic repository selection process). Interim Storage will mean more transportation for the waste, increasing the likelihood of a transportation accident involving nuclear waste. Use of Interim Storage also makes spent fuel reprocessing more likely, which also increases the need for waste transportation, with little foreseeable economic benefit.

Ms. Curran provided a fact sheet describing several reasons for opposing Consolidated Interim Storage of Spent Nuclear Fuel. Many of these reasons question the legality of opening an interim storage facility in the absence of a permanent disposal facility. This fact sheet is available from the "March 6, 2023" materials section on the Committee webpage via the following link:

https://archive.beyondnuclear.org/centralized-storage/2021/9/11/new-beyond-nuclear-fact-sheets-opposing-consolidated-interim.html

Ms. Curran concurred with Mr. Silberg that a firm direction that cannot be changed by a subsequent Administration, with well-defined schedules and funding mechanisms, must be established for there to be any significant progress on a National Nuclear Waste Policy and a disposal facility.

#### June 12 and June 19, 2023 Committee Meetings

At its June 12 and June 19 meetings, the Committee discussed potential recycling and reprocessing options for spent nuclear fuel. Both meetings featured a presentation by a recognized expert regarding nuclear fuel reprocessing and recycling. The US Department of Energy is reconsidering reprocessing (recycling) nuclear fuel, a practice essentially prohibited in the US for several decades, to limit reliance on foreign uranium sources. Some existing light water reactors can use reprocessed fuel, while several proposed new reactor designs, if implemented, may require it.

At the June 12 meeting, <u>Dr. Sven Bader</u>, Technical Consultant at Orano Federal Services, provided a general description of spent fuel reprocessing and outlined several reprocessing and recycling options. Dr. Bader's presentation slides for this discussion, along with some additional background material, is available in the "June 12, 2023" materials section on the Committee webpage. A recording of this meeting is available at: <a href="https://youtu.be/4UmhYxv9sLo">https://youtu.be/4UmhYxv9sLo</a>.

Dr. Bader noted that current US nuclear fuel policies focus on "once through" uses nuclear fuel; "fresh" fuel assemblies are loaded into a reactor core and are used to produce power until structural integrity considerations require their replacement. At this point, the fuel is destined for disposal as radioactive waste, even though the fuel is potentially reusable. Reprocessing or recycling of the fuel would allow additional energy production from a resource that is currently considered as waste. Recycling nuclear fuel would reduce, but not replace, the need for a deep geologic waste repository. This is particularly true if several proposed advanced reactor designs that use recycled Uranium are actually built. Current research into transitioning to a recycled fuel policy program was outlined, along with the benefits of using recycled fuel (e.g., reduced need for Uranium mining, the benefits reducing the total Plutonium inventory worldwide) were also highlighted.

At the June 19 meeting, **Dr. Edwin Lyman**, Director of Nuclear Power Safety at the Union of Concerned Scientists, provided a presentation on the potential hazards and obstacles in current spent nuclear fuel reprocessing and recycling proposals. Dr. Lyman's presentation slides for this discussion, along with some additional background material, is available in the "June 19, 2023" materials section on the Committee webpage. A recording of this meeting is available at: <a href="https://youtu.be/86xdflXj04">https://youtu.be/86xdflXj04</a>

Dr. Lyman's primary concerns are that recycling spent nuclear fuel is essentially ineffective and potentially dangerous. Extracting usable Uranium or Plutonium from spent fuel still leaves a significant amount of radioactive waste that will still require a geologic repository. While some waste volume is reduced, the remaining volume is still substantial and is still very hazardous. Reprocessing can result in multiple radioactive waste streams that could require multiple repositories to safely manage. Moreover, the extracted Uranium and Plutonium is potential weapons material, requiring significant protection from theft by terrorist groups during the recycling process. Additionally, reprocessing methods will produce low-level radioactive waste while fuel is being reprocessed. This could result in a significantly increased need for low level radioactive waste disposal facilities. Lastly, recycling spent nuclear fuel is an expensive process. The overall cost of managing spent nuclear fuel would increase significantly when factoring in reprocessing costs.

#### September 25, 2023 Committee Meeting

At this meeting, Dr. Sara Hogan, Transportation Program Manager for the US Department of Energy (DOE) Office of Integrated Waste Management (IWM) provided a presentation on US DOE's De-Inventory Reports. These reports assess the available Origin Site Infrastructure (i.e., Spent Nuclear Ful transportation capabilities from present storage sites, such as VY), the likely support activities, and potential transportation routes necessary for removing Spent Nuclear Fuel from a former or currently operating commercial nuclear power plant site. The

presentation slides for this discussion are available from the "September 25, 2023" materials section on the Committee webpage. A recording of this meeting is available at: https://youtu.be/Mzs6d8CIFTc.

Joining Dr. Hogan for this presentation were Dr. Steve Maheras, a Nuclear Fuels Transportation Planning Expert from DOE's Pacific Northwest National Laboratory, and Gerold Jackson, a DOE Nuclear Fuels Transportation Security Expert, both of whom provided additional details in response to Committee Member and Public questions about the presentation.

Dr. Hogan noted that since there currently is not a specific destination for US Spent Nuclear Fuel disposal, the De-Inventory Reports evaluate activities necessary to transport the fuel to the Geographic Center of the United States (GCUS). By investigating spent fuel moves to the GCUS, logistics and activities necessary to transport fuel to anywhere within the contiguous United States are identified.

While the DOE presentation discussed the general scope of the De-Inventory Reports Program, several preliminary items that will likely appear in the Vermont Yankee De-Inventory Report were noted. 5 potential travel routes from Vermont Yankee to the GCUS have been identified; 3 of these routes would use rail transportation exclusively. 2 of these routes would use heavy haul truck to nearby transload locations with transfer to rail for the remaining travel to the GCUS. Further details on the Vermont Yankee De-Inventory Report are currently unavailable since the report is still in development. The initial draft of the report is expected to become available during the early 2024 Federal Fiscal Year (i.e., either by the end of the 2023 Calendar Year or in very early 2024).

Near the conclusion of the meeting, the Committee discussed meeting on December 4 to discuss its summary of activities that will be incorporated into the Panel's Annual Report to the Vermont Legislature. This meeting date was later confirmed by a Committee members polling on availability on that date.

#### **December 4, 2023 Committee Meeting**

At its December 4 meeting, the Committee reviewed its 2023 activities. Written summaries for previous 2023 Committee meetings included in the (11/29/2023 version of the) VT NDCAP 2023 draft Annual Report were reviewed. Recommended changes and additions to these summaries were provided by Committee members and several members of the public attending this meeting. Specifically, several Committee members requested that the summaries emphasize whether a stated point was made by a meeting's guest speaker or by Committee members. Several items in the draft summaries stated significant points, but it was unclear which meeting speaker made them. (There were multiple guest speakers at some Committee meetings this

year.) Without these clarifications, it could appear that the stated points were opinions of the Committee rather those of the invited speakers.

Much of the Committee discussion about the several meeting summaries focused on a point made in the Committee's March 6 meeting, namely that both of that meeting's two invited speakers agreed that National Nuclear Waste Policy requires a firm direction that cannot be changed by a subsequent Administration, with well-defined schedules and funding mechanisms. Otherwise, there will not be any significant progress on National Nuclear Waste Policy and locating a national spent nuclear fuel disposal facility. The Committee believes this to be a significant point since both speakers for the March 6 meeting, <u>lay Silberg</u>, and <u>Diane Curran</u>, agreed on this point.

The Committee also discussed whether transcripts of meeting recordings could be made available to facilitate retrieving key discussion points and statements made during meeting presentations. State Nuclear Engineer Tony Leshinskie noted that the Microsoft Teams platform used for broadcasting and recording FNWP Committee meeting also generates a transcript. However, the transcript quality is frequently poor. Wording in the transcript is sometimes incorrect and can require reviewing the meeting recording to understand what was actually said. He also reminded the Committee that Full Panel meetings use a Zoom platform provided by BCTV, who records Full Panel meetings. He's uncertain whether BCTV's Zoom account can generate a transcript. Getting an accurate transcript for VT NDCAP Full Panel and Committee meetings may be a significant effort. Additionally, Tony will need to check whether there are any Vermont State regulations or restrictions regarding meeting transcripts. Nonetheless, Tony agreed to look into this request further. He also agreed to provide a copy of the raw transcript from today's FNWP Committee to Committee members so they can have a better idea of the quality of the transcripts currently available.

The Committee also identified potential discussion topics during 2024. Topics that the Committee intends to explore in 2024 (some of which carried over from 2023) include:

- DOE's Next Steps in Developing a Consent-Based Siting Process
- A presentation by Waste Control Specialists (WCS) on its Radwaste Disposal Operations
- Continued Learning on Low-Level Radioactive Waste Disposal in General
- Use of the US Justice Department's Judgement Fund for Spent Fuel Storage Expenses
- Issuing a Statement Emphasizing the Need to Resolve Nuclear Waste Issues
- Issuing a Statement Calling for an Independent Agency to Manage the US Nuclear Waste Inventory (rather than DOE)
- Inviting a member of the 2012 Blue Ribbon Commission (BRC) on America's Nuclear
   Future to speak on the intent of the BRC's recommendations
- Hear presentations from other Nuclear Decommissioning Advisory Panels (such as
   the San Onofre Nuclear Generating Station Citizens Engagement Panel)

1226 Several members of the public attending the meeting suggested that the Committee meet 1227 directly with Vermont political leadership, including Vermont Governor Phil Scott, to discuss 1228 Nuclear Waste Policy concerns. Several members of the public also urged that the Panel's two 1229 vacant Massachusetts and New Hampshire towns representatives be filled as soon as possible. 1230 1231 Committee meeting dates for 2024 were also discussed. The Committee agreed to continue 1232 meeting on a quarterly basis, with the following tentative 2024 meeting dates chosen: 1233 1234 March 4 1235 June 17 September 9 1236 • 1237 December 2 1238 1239 Additional Committee meeting dates will be considered in 2024 as necessary. 1240 1241 For its March 4 meeting, the Committee will invite representatives from Vermont's 1242 Congressional Delegation to hear Committee concerns on current spent nuclear fuel policies. 1243 The Committee will also invite Oliver Edelson, Legislative Assistant to California Congressman 1244 Mike Levin, to attend this meeting. Congressman Levin co-chairs the Congressional Spent 1245 Nuclear Fuel Solutions Caucus, which Mr. Edelson administers. (Mr. Edelson previously spoke to the FNWP Committee in October 2022.) 1246 1247 1248 Committee meetings will continue to nominally run from 12 noon to 1:00 PM and will be 1249 conducted primarily as webcasts. However, unless the Vermont Legislature opts to extend ACT 1250 1 of the 2023 Vermont Legislature, physical meeting spaces will be required for meetings 1251 occurring after July 1, 2024. By Committee consensus, Lissa Weinmann will continue as FNWP 1252 Committee Chair during 2024. 1253 1254 1255 XII. Meeting Schedule and Priorities for 2024 1256 1257 During the Panel's December 11 meeting, the Panel reached consensus on the following meeting dates for 2024: 1258 1259 1260 May 6: Regular meeting discussing and assessing the Decommissioning Project Annual 1261 Status Reports (required by PUC Case 8880); additional agenda items to be determined as needed. 1262 1263 September 16: Regular meeting; agenda items to be determined December 9: Regular meeting; agenda items to be determined 1264 1265

The Panel's main priority for 2024 will be to continue its work as outlined in the Panel Charter

and required by the Legislation that established the Panel's composition and duties. The Panel

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1268	will also continue to consider improvements in its public outreach. Any changes to these
1269	priorities will be communicated to the Legislature and the Governor's Office once they are
1270	known.
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1273	XIII. Panel Composition and Duties Change Recommendations
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1275	As part of the Panel Duties outlined in Part II of the Panel Charter (see Section II of this Report),
1276	the Panel "shall assess further changes to the Panel's membership or duties as appropriate." The
1277	most recent changes in Panel composition and duties are those approved by the 2021
1278	Legislature in Act 54. The Panel currently has no additional change recommendations for its
1279	composition or duties.
1280	

# Appendix A: Panel Advisory Opinions Approved in 2023 1282 1283 No Advisory Opinions were approved in 2023.

#### 1285 Appendix B: List of Acronyms Used in this Report

ANR	Vermont Agency of Natural Resources
AOC	Area of Concern (potential hazardous materials contamination location)
AOG	Advanced Off-Gas (system)
BCTV	Brattleboro Community Television
CAS	Central Alarm Station
CISF	Consolidated Interim Storage Facility
DEC	Vermont Department of Environmental Conservation
	(part of Agency of Natural Resources)
DOE	United States Department of Energy
DSP	Dryer / Separator Pit
EPA	United States Environmental Protection Agency
<b>FNWP</b>	Federal Nuclear Waste Policy (an active VT NDCAP Committee)
FPG	Four Points Group (a PSD consultant for VT Yankee's decommissioning)
GCUS	Geographic Center of the United States
GTCC	Greater than Class C (a type of low-level Radioactive Waste)
HEPA	High-Efficiency Particulate Air
IOG	Interim Off-Gas (system)
ISFSI	Interim Spent Fuel Storage Installation
LTP	License Termination Plan
MOU	Memorandum of Understanding
NDCAP	Vermont Nuclear Decommissioning Citizens Advisory Panel (VT NDCAP also used)
NDT	Nuclear Decommissioning Trust (fund)
NRC	United States Nuclear Regulatory Commission
ORISE	Oak Ridge Institute for Science and Education
OSHA	United States Occupational Safety and Hazards Administration
PCBs	Polychlorinated Biphenyl substances
PFAS	Per-Fluoroalkyl and Polyfluoroalkyl Substances
PSD	Vermont Public Service Department
PSDAR	Post-Shutdown Decommissioning Activities Report
RB	Reactor Building
RFI	Request for Information
RV	Reactor Vessel
RWCU	Radioactive Waste Clean-Up (system)
RWS	Recirculating Water System
SFP	Spent Fuel Pool
SRT	Site Restoration Trust (Fund)

#### **Appendix B: List of Acronyms Used in this Report** (continued)

TB Turbine Building

VOCs Volatile Organic Compounds

VY Vermont Yankee

WCS Waste Control Specialists (a sister company to NorthStar)

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