



NUCLEAR DECOMMISSIONING CITIZENS ADVISORY PANEL
PUBLIC SERVICE DEPARTMENT

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

2020

Published: **January 2021**
(Approved by the Panel on **January XX, 2021**)

Highlighted portions of this report draft identify sections that will require modification after the December 7, 2020 Panel meeting and the end of the 2020 calendar year.

1 **- Nuclear Decommissioning Citizens Advisory Panel -**
2 **2020 Annual Report to the Governor of Vermont and the**
3 **Energy Committees of the General Assembly**
4 (House Energy & Technology,
5 House Commerce & Economic Development,
6 House Natural Resources, Fish and Wildlife, and
7 Senate Natural Resources & Energy Committees)
8

9 **I. Statutory Authority and Duties**
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11 The nineteen-member Vermont Nuclear Decommissioning Citizens Advisory Panel (NDCAP) was
12 established during the 2014 legislative session. For details on membership and duties, see
13 <https://legislature.vermont.gov/statutes/fullchapter/18/034>. The list of current members of the
14 Nuclear Decommissioning Citizens Advisory Panel may be found at
15 [http://publicservice.vermont.gov/electric/ndcap \(aka, the NDCAP website\)](http://publicservice.vermont.gov/electric/ndcap_aka_the_NDCAP_website). Changes in Panel
16 membership during 2020 may be discerned by reviewing the meeting minutes and meeting
17 recordings available at the NDCAP website.
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19 **II. Charter**
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21 The NDCAP Charter was adopted on February 25, 2015 and amended on May 26, 2016. The
22 Charter is available at
23 [https://publicservice.vermont.gov/sites/dps/files/documents/NDCAP/Amended%20NDCAP%20](https://publicservice.vermont.gov/sites/dps/files/documents/NDCAP/Amended%20NDCAP%20Charter%20%28Adopted%202016.05.26%29.pdf)
24 [Charter%20%28Adopted%202016.05.26%29.pdf](https://publicservice.vermont.gov/sites/dps/files/documents/NDCAP/Amended%20NDCAP%20Charter%20%28Adopted%202016.05.26%29.pdf). No changes to the NDCAP Charter were made
25 during 2020. However, as detailed in Sections III and XIII, the Panel has continued discussions on
26 potential changes in NDCAP composition and duties that began in 2019. Several changes to the
27 legislation establishing the Panel were submitted to the Legislature in February 2020. Once
28 enacted, these legislative changes would require revising the NDCAP Charter.
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30 **III. Meeting Highlights**
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32 The NDCAP held five meetings in 2020; meetings were held in January, February, May, September
33 and December. All meetings were open to the public and opportunities for comments from the
34 public were provided. The February meeting focused on finalizing the Panel’s recommendations
35 for changes in its composition, funding and duties for consideration by the Vermont Legislature
36 during its 2020 session. The January, May September and December meetings included updates
37 on recent VY decommissioning activities by both NorthStar and the State of Vermont. Educational
38 and issue-specific topics were also discussed at these meetings. Opportunities for discussion and
39 comments from Panelists and the public on all covered topics were provided during each meeting.
40 A summary of each meeting is presented below.

41 The minutes of each meeting can be found on the NDCAP website (a dedicated section of the Public
42 Service Department website) at <http://publicservice.vermont.gov/electric/ndcap>. A complete
43 video or webcast recording for each meeting can be found at:
44 <https://www.brattleborotv.org/vt-nuclear-decommissioning-citizens-advisory-panel>.
45 (Links to these video recordings are also available through the NDCAP website).
46 Additional information regarding VY's active decommissioning is available at the Public Service
47 Department's recently launched "VY Decommissioning" website at:
48 <https://publicservice.vermont.gov/content/vermont-yankee-decommissioning>

49
50 **January 13, 2020**

- 51 • **Update on Decommissioning Activities at VY:** Panelist Corey Daniels, VY's Senior Spent
52 Fuel Storage Manager, provided a presentation that outlined ongoing Reactor Vessel
53 (Steam Separator) segmentation and Steam Turbine dismantling activities occurring
54 onsite. Onsite asbestos abatement work was also described. Planned demolitions of the
55 Advanced Off-Gas (AOG) Building and the Site "Shipping and Receiving" Warehouse were
56 described. A groundwater diversion system for the Turbine Building was also described.
57 It was also reported that Antioch University of New England has been contracted to
58 perform a VY site study / land use inventory for exploring site redevelopment options.
- 59 • **State of Vermont Decommissioning Activities:**
60 Panelist Emily Boedecker, Department of Environmental Conservation (DEC)
61 Commissioner, outlined DEC's and the Agency of Natural Resources (ANR) roles in
62 overseeing VY's non-radiological remediation and site restoration activities. DEC and
63 ANR actions in response to VY's activities reported in Corey Daniels' presentation were
64 described.
65 Panel Member Dr. Bill Irwin, Vermont Radiological and Toxicology Sciences Chief,
66 outlined Vermont Department of Health oversight at VY. Health's sampling and
67 monitoring programs for air, milk, groundwater, sediments, fish and water supplies
68 within the Vernon and Brattleboro vicinities were described. Monitoring program
69 results are available at [https://www.healthvermont.gov/health-](https://www.healthvermont.gov/health-environment/radiological-health/vermont-yankee)
70 [environment/radiological-health/vermont-yankee](https://www.healthvermont.gov/health-environment/radiological-health/vermont-yankee).
71 Jim Porter, Vermont Public Service Department Director of Public Advocacy, outlined
72 the Department's monitoring of the VY Decommissioning Project since the Panel's
73 December 2019 meeting. In general, the expenditures thus far on the project are
74 consistent with the observed progress for the project.
- 75 • **Review of Panel Legislation Changes:** The Panel reviewed proposed wording
76 changes to the Legislation the created the Panel, documents its composition and
77 identifies its duties (18 VSA §1700 to §1702). The first draft of the proposed is
78 available at [https://publicservice.vermont.gov/sites/dps/files/documents/20-](https://publicservice.vermont.gov/sites/dps/files/documents/20-0287_Sibilia_Draft_NDCAP_Legislation_Changes.pdf)
79 [0287_Sibilia Draft NDCAP Legislation Changes.pdf](https://publicservice.vermont.gov/sites/dps/files/documents/20-0287_Sibilia_Draft_NDCAP_Legislation_Changes.pdf). After discussing these proposed
80 changes, the Panel voted that the changes should also include a means for NorthStar to
81 fund at least a portion of the Panel's expenses. The Panel agreed that an open
82 discussion on Panel expenses and potential means of funding the Panel was necessary.

83 It was agreed that this discussion would be the only topic on the agenda for the Panel's
84 next meeting (February 3, 2020).

- 85 • **Finalization & Approval of Annual Report to the VT Legislature:** The Panel reviewed
86 the draft of the 2019 Annual Report to the Legislature available at
87 [https://publicservice.vermont.gov/sites/dps/files/documents/2019_VT_NDCAP_Annual](https://publicservice.vermont.gov/sites/dps/files/documents/2019_VT_NDCAP_Annual_Report_Draft_2020.01.06_to_Panelists.pdf)
88 [Report Draft 2020.01.06 to Panelists.pdf](https://publicservice.vermont.gov/sites/dps/files/documents/2019_VT_NDCAP_Annual_Report_Draft_2020.01.06_to_Panelists.pdf). Several changes to the draft was requested,
89 some of which State Nuclear Engineer Tony Leshinskie indicated would not be available
90 this evening. After a brief discussion, the Panel voted to approve the report and have it
91 published once the several requested changes had been incorporated.
- 92 • **During Public Comments** concern was expressed that the Panel meetings were not
93 adequately publicized. In response, State Nuclear Engineer Tony Leshinskie noted the
94 several ways that Panel meetings are publicized. He also reminded people that the Panel's
95 website (<https://publicservice.vermont.gov/electric/ndcap>) includes the most current
96 information on upcoming Full Panel and Committee meetings.
97 Dr. Christa Daniels briefly introduced herself as the director for the Antioch
98 University of New England (AUNE) project that will perform a VY site study / land
99 use inventory for potential redevelopment options.

100

101 **February 3, 2020**

102 The main purpose of this Panel Meeting was to discuss the Panel's operating costs and
103 examine potential funding options to cover these costs. Panelists (and Vermont
104 Representatives) Laura Sibilia and Sara Coffey outlined a legislative proposal for NorthStar to
105 cover the Panel's administrative expenses. Details of this proposal are available at:
106 [https://publicservice.vermont.gov/sites/dps/files/documents/20-](https://publicservice.vermont.gov/sites/dps/files/documents/20-0287_Sibilia_Draft_NDCAP_Legislation_Changes.pdf)
107 [0287 Sibilia Draft NDCAP Legislation Changes.pdf](https://publicservice.vermont.gov/sites/dps/files/documents/20-0287_Sibilia_Draft_NDCAP_Legislation_Changes.pdf)

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109 and in an accompanying cover letter:

110 [https://publicservice.vermont.gov/sites/dps/files/documents/Cover_note_for_discussion_pr](https://publicservice.vermont.gov/sites/dps/files/documents/Cover_note_for_discussion_proposal_1.28.2020.pdf)
111 [oposal_1.28.2020.pdf](https://publicservice.vermont.gov/sites/dps/files/documents/Cover_note_for_discussion_proposal_1.28.2020.pdf)

112

113 The proposal provides for coverage of Panel administrative expenses, staff to address Panel
114 administration and communications, as well as an increase in the meeting per diem for eligible
115 Panelists to \$100. The proposal does not cover making experts available to the Panel.
116 Feedback from tonight's meeting can be factored into the final version of the proposal.

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118 Public Service Commissioner June Tierney briefly discussed the summary of NDCAP 13
119 expenditures that the Public Service Department (PSD) compiled for FY2014 through FY2019.
120 (This summary is available at [https://publicservice.vermont.gov/content/summary-panel-](https://publicservice.vermont.gov/content/summary-panel-expenses-fy2014-through-fy2019)
121 [expenses-fy2014-through-fy2019](https://publicservice.vermont.gov/content/summary-panel-expenses-fy2014-through-fy2019).) The Commissioner noted some of the details that have
122 factored into the Panel's costs during her tenure, adding that PSD Staff and Agency Meeting
123 Attendance costs included in Sections II and III of the Summary were ineligible for billback to
124 Northstar. PSD expenditures for the Panel would likely not vary significantly without changes
125 in PSD-related legislation.

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After some discussion by Panel members and feedback from members of the public attending the meeting, Commissioner Tierney proposed an additional change to 18 VSA §1700 part (g)(6) that would allow PSD to annually bill the owners of Vermont Yankee (currently NorthStar) for reasonable Panel expenses, including hiring experts for the Panel. The Vermont Yankee owners would have the right to dispute and settle on expenses through the Public Utility Commission petitioning process. After additional Panel discussion, it was agreed that Panel promotion / public engagement expenses should be included as eligible expenses. Consensus developed that the \$35,000 annual limit on Panel expenses was reasonable. Greg DiCarlo, NorthStar General Counsel (who was in the audience), indicated that what was being discussed was a potentially workable solution. However, he would have to review this further and report back to the Panel.

The proposed changes to 18 VSA §1700 through §1702 adopted by the Panel are available at: <https://legislature.vermont.gov/bill/status/2020/H.740> (see “As Introduced” version).

May 4, 2020

In response to the COVID-19 pandemic, this meeting was conducted entirely by Skype webcast.

- **Status Report on Panel Legislation:** Legislation that the Panel had discussed at its January and February 2020 meetings has been “set aside” while the Legislature addresses COVID-19 pandemic issues. Scott State, NorthStar CEO reported that NorthStar has decided to voluntarily contribute Panel funding on July 1, 2020 (up to \$35,000) as though the Legislation had passed. VT Representative and Panel Member Laura Sibia reported that the bill has passed the Vermont House and is under consideration by the Vermont Senate. While the bill will likely pass, it probably will not pass before July 1 due to other, higher priority issues. Reps. Sibia and Sara Coffey thanked NorthStar for their offer. Public Service Commissioner June Tierney also thanked NorthStar for its offer and indicated that the Public Service Department (PSD) will find a way to implement the offer, if possible. (Potential legal hurdles must be considered.)
- **NorthStar Update on VY Site Decommissioning Activities:** NorthStar Panelist Corey Daniels summarized decommissioning activities completed since January 2020. (Slides for this presentation are available from the Panel’s website.) Current Reactor Vessel (RV) segmentation activities are focused on completing RV Steam Separator segmentation and packaging them for offsite shipment. Steam piping and valve cutting within the Turbine Building were described. Ongoing remediation efforts for hazmat Areas of Concern (AOCs) were outlined. The demolition of the remaining onsite warehouse has commenced.
- **Assessment of NorthStar 2019 Annual Project Report:** 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 and Mark Gymr of Four Points Group (FPG), PSD’s consultants for overseeing the project, were also present to discuss the assessment. (Slides for this presentation are available from the Panel’s website.) NorthStar’s required annual financial disclosures have been received and assessed by PSD and FPG. Nuclear Decommissioning Trust (NDT) and Site Restoration Trust (SRT) disbursements over the past year were evaluated. The end of

170 (2019) year balance of the NDT is approximately \$425 million; the SRT balance is
171 approximately \$62 million. Based on PSD and FPG reviews, no safety concerns for the
172 project were identified. The percentage of the project completed (~17.3% complete) is
173 consistent with the expenditures to date. The project is currently on track to be completed
174 within the funds available for the project. In response to Panel questions, FPG indicated
175 that “red flags” for the project would be:

- 176 1) a change in scope that would significantly increase project cost
177 (e.g. finding unexpected contamination),
- 178 2) a substantial change in schedule,
- 179 3) any change that would prevent NorthStar from making the financial assurances included
180 in the project agreement.

181 While there have been several schedular changes (mostly for RV segmentation), NorthStar
182 has taken corrective actions. The project’s financial assurance conditions have improved
183 in the past year.

184 • **Department of Environmental Conservation Update:** Gerold Noyes, Environmental
185 Engineer in the Department of Environmental Conservation’s (DEC’s) Waste Management
186 and Prevention Division outlined DEC’s oversight of VY’s decommissioning within the past
187 year. (Slides for this presentation are available from the Panel’s website.) DEC examined
188 the Supplemental Site Investigation (SSI) received on January 31, 2020, which updates the
189 initial Site Investigation and takes additional sampling in several Areas of Concern (AOCs).
190 Much of the additional sampling was soil sampling to assess contamination resulting from
191 fuel storage, transformer coolants and onsite vehicle maintenance activities. The SSI did
192 not find any new or significant contaminant sources. The SSI results will be used to
193 develop corrective action plans. Groundwater sampling conducted during 2019 was
194 described. DEC assessed whether the sampling was conducted consistently with project
195 plans. The report on this sampling will be published in the near future. The groundwater
196 intercept system was briefly described. The required permitting for this plan remains
197 under review. Corrective Action Plans for AOCs #3, 7 and 8 and a general corrective action
198 plan have been received. Most of the clean-up at these AOCs has been soil removals to
199 address oil spills. Public comments on the plans may be submitted via
200 <https://enb.vermont.gov/>. Onsite abatement for asbestos and lead paint continues.
201 Groundwater sampling has shown contaminations similar to that of a gas station.
202 Groundwater intercept well sampling will be done to assure that any water discharged to
203 the Connecticut River is not contaminated.

204 • **In response to questions from the Public:** Corey Daniels outlined the COVID-19
205 protective measures in place at VT Yankee. Face masks are required when working in
206 areas with other people. Work crew sizes have been reduced as much as possible. Remote
207 working has been implemented where possible. Additional site cleaning in common areas
208 has been implemented. Meals are being brought onto site to limit risk of exposure while
209 buying lunch. Additionally, workers are required to self-monitor their temperatures daily,
210 practice social distancing, report if they have been exposed to a potential or positive
211 COVID-19 case, and abide by a rules from the VT Governor’s current pandemic mitigation
212 executive orders. As of May 21, 2020, no one onsite has tested positive for COVID-19.

213 • **Panel Pursuit of National Decommissioning and Spent Fuel Issues:** Panel Vice-Chair
214 Lissa Weinmann requested discussion on this topic. The Panel’s duties call for the Panel to
215 advise the Governor and the Legislature on nuclear decommissioning related issues.
216 However, the Panel has issued very few advisory opinions. It may be appropriate for the
217 Panel to provide advisory opinions on national nuclear issues, particularly those related to
218 redevelopment of decommissioned sites (such as Vermont Yankee) impacted by spent fuel
219 disposal issues. The Panel should consider weighing in on one or more of the legislative
220 proposals before Congress regarding decommissioning and spent fuel management to
221 stimulate national action. There may be opportunities for the Panel to support NorthStar
222 in addressing spent fuel / nuclear waste issues, such as the push for licensing WCS’
223 proposed interim storage facility. The Panel is on the record as supporting interim storage
224 through a letter that former Chair Kate O’Connor signed onto in 2015. The Panel should
225 consider whether this position is still supported by most of its current members. several
226 years ago. After some discussion, the Panel voted on whether a committee should be
227 formed for drafting an advisory opinion on interim spent fuel storage. The proposal was
228 defeated 8 to 4 with 1 abstention. Several Panelists noted that they were open to
229 discussing this issue again once live meetings are again possible to assure appropriate
230 public participation in the discussion.

231 • **During Meeting Wrap-Up** concern was expressed that the Skype meeting platform was
232 not adequate for conducting Panel meetings solely as webcasts. State Nuclear Engineer
233 Tony Leshinskie apologized for the difficulties that were encountered during tonight’s
234 meeting. He committed to pursuing more capable platforms for the next Panel meeting.
235

236 **September 21, 2020**

237 • **NorthStar Update on VY Site Decommissioning Activities:** NorthStar Panelist Corey
238 Daniels summarized decommissioning activities completed since May 2020. (Slides for this
239 presentation are available from the Panel’s website.) Current Reactor Vessel (RV)
240 segmentation efforts are focused on removing Control Rod Guide Tubes and the Core Plate
241 near the RV bottom, completing Core Top Guide (upper grid) segmentation and packaging
242 its segments for shipment offsite. Steam piping and valve cutting within the Turbine
243 Building were described. Demolition of the remaining onsite warehouse has completed.
244 Demolition of the Advanced Off-Gas Building is nearing completion.

245 In response to a question from the Public, Corey Daniels briefly described the June 19
246 accident involving an empty radioactive waste cannister being delivered to the VY site: a
247 new, empty cannister transported by heavy haul, multi-axle truck to the site encountered a
248 road construction zone along its route. In avoiding the road construction, the trailer tires
249 hit soft ground, which prompted a rollover. The cannister sustained some cosmetic
250 damage; no injuries occurred. The cannister was recovered and brought to VY within 24
251 hours of the accident. Although not required, the NRC was notified of the incident. Since
252 that time, the cannister has been inspected, integrity tested and validated that it can be
253 safely used.

254 • **Public Service Department (PSD) Project Assessment and Update:** PSD Special Counsel
255 Eric Guzman updated the Panel on PSD’s fiscal and technical oversight of the VY

256 Decommissioning project. Based on review of expenditures and project progress thus far
257 this year, NorthStar remains on course to complete VY's Decommissioning within available
258 funding.

259 • **VT Agency of Natural Resources (ANR) / Department of Environmental Conservation**
260 **Project Update:** Gerold Noyes, Environmental Engineer in DEC's Waste Management and
261 Prevention Division outlined DEC's oversight of VY's decommissioning since the Panel's
262 May 4, 2020 meeting. Much of this oversight is a continuation of items provided in DEC's
263 May 4, 2020 presentation. No previously unknown site contaminations or concerns have
264 been identified. The DEC permit processes for modifying the onsite drinking water supply
265 and discharging groundwater from newly installed intercept wells to the Connecticut River
266 were discussed.

267 • **Vermont Department of Health Update:** Panel member Dr. Bill Irwin gave a verbal
268 summary of the Health's current oversight of Vermont Yankee decommissioning activities.
269 (This summary begins at 1:00:21 in the meeting video.) Bill has had several opportunities
270 to observe ongoing VY activities, particularly in partnership with DEC. Health participates
271 in biweekly phone calls between NorthStar and other State Agencies to discuss project
272 progress. Two onsite inspections have occurred since the start of the COVID-19 pandemic.
273 Activities discussed in NorthStar's updates to the Panel have been observed first-hand.
274 Health is supporting DEC in the permitting process to allow groundwater discharges to the
275 Connecticut River. This support has included discussion of monitoring options to assure
276 that the discharges are radiologically clean. Health continues to track and receive
277 information on all radiological waste shipments leaving VY. Health is notified of the
278 departure date, time and activity contained in each shipment. This information is
279 shared with Vermont law enforcement agencies and first responders in case an
280 incident response become necessary.

281 • **Two COVID-19 cases** were identified in the VT Yankee workforce. NorthStar's contact
282 tracing efforts in response to these cases were commended.

283 • **Current Status of US Nuclear Spent Fuel Policy:** Jim Hamilton, Executive Director of
284 The Nuclear Decommissioning Collaborative briefly summarized current options for
285 spent nuclear fuel storage and disposal allowed under current US spent nuclear fuel
286 policy (the Nuclear Waste Policy Act of 1982, with Amendments). Inaction to date on
287 spent nuclear fuel storage and disposal issues are due to "inaction costs" currently being
288 much less economically and politically expensive than those associated with setting a
289 policy direction. The impact of inaction costs is currently borne by several isolated
290 communities surrounding former nuclear power stations (e.g. VY, Yankee Rowe, etc.),
291 which have been easy to ignore. As higher profile power plants shutdown (e.g. Indian
292 Point near New York City, San Onofre between Los Angeles and San Diego, and Diablo
293 Canyon north of Los Angeles), the change in inaction costs could bring a shift in Federal
294 Policy.

295 Current options for storage and disposal of Vermont Yankee's spent nuclear fuel include:

- 296 ○ Send VT Yankee Spent Fuel to Yucca Mountain
- 297 ○ Send VT Yankee Spent Fuel to an Interim Storage Facility and then subsequently to
298 Yucca Mountain or Another (currently unidentified) Repository
- 299 ○ Send VT Yankee Spent Fuel Directly to Another (currently unidentified) Repository

- 300 ○ Use On-Site Deep Geologic Disposal (as proposed by deepisolation.com)
- 301 ○ No Change (use current dry cask storage indefinitely)

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303 The last option incurs taxpayer costs because spent fuel facility owners such as VY regularly
304 sue the US Department of Energy for damages for its failure provide a national spent
305 nuclear fuel repository. Damages in such lawsuits are taxpayer dollars (from the Federal
306 government's "Judgement Fund").

- 307 • **Congressional Delegation Update on Spent Fuel Bills Before Congress:** The provided
308 update is summarized in Section X herein.
- 309 • **Numerous Public Comments** were received throughout this meeting voicing concerns
310 over radioactive waste and spent nuclear fuel storage and shipment practices within the
311 United States. The Panel received several requests to pursue these national concerns as
312 well as ongoing Vermont Yankee activities.
- 313 • **Status Report on VT NDCAP Legislation:** Panelist and VT State Representative Sara
314 Coffey reported that the proposed VT NDCAP legislation changes (to 18 VSA §§1700-1702)
315 adopted by the Panel at the February 3, 2020 meeting will probably not get through the
316 Legislature before the end of the year due to other higher legislative priorities (e.g. the state
317 budget and COVID-19 response). It is Reps. Coffey and Sibilias's intent to reintroduce this
318 legislation next year. Corey Daniels added that NorthStar remains committed to providing
319 financial support for the Panel of up to \$35,000 per year.
- 320 • **Panel 2020 Annual Report:** The Panel approved State Nuclear Engineer Tony Leshinski's
321 outline for the Annual Report. A draft of the Annual Report will be available at least one
322 week prior for review at least one week prior to the next Panel meeting.

323 •

324 **December 7, 2020**

- 325 • **NorthStar Update on Recent VY Site Decommissioning Activities:** Panel Member Corey
326 Daniels, NorthStar Senior ISFSI (spent fuel storage) Manager at Vermont Yankee, presented
327 a summary of recent site decommissioning activities.
- 328 • **Vermont State Agencies' Update on VY Decommissioning:** VT Public Service Department
329 (PSD) Special Counsel Eric Guzman provided a brief presentation on PSD's continuing
330 financial and technical reviews of Vermont Yankee's decommissioning. PSD's primary
331 responsibility is to confirm that the work completed to date is reasonable after considering
332 the NorthStar's reimbursement requests from the Nuclear Decommissioning Trust (NDT) to
333 date. Overall, the VY's decommissioning continues to progress smoothly.
334 Further details of PSD's tracking of VY's decommissioning is available at PSD's dedicated
335 Vermont Yankee website at:
336 <https://publicservice.vermont.gov/content/vermont-yankee-decommissioning>.
337 Monthly balances for Vermont Yankee's Nuclear Decommissioning Trust (NDT) and Site
338 Restoration (SRT) funds are available at this website, along with summaries of the
339 decommissioning expenditures that PSD receives monthly.
- 340 • Gerold Noyes, Environmental Engineer in the Department of Environmental Conservation's
341 (DEC's) Waste Management and Prevention Division outlined DEC's oversight of VY's

342 Decommissioning through Supplemental Site Investigations (SSIs), review of Corrective
343 Action Plans and hazardous materials remediations (including asbestos abatement),
344 groundwater sampling, and observations of work-practices.

345 • **Panel Advisory Opinion on Interim Spent Fuel Storage:** The Panel discussed an
346 Advisory Opinion proposed by Panel Vice-Chair Lissa Weinmann regarding whether a
347 letter that the Panel Chair signed in 2015 puts the Panel on record as supporting
348 Interim Spent Fuel Storage. The Panel Chair signed on to this letter prior to
349 discussing it with the rest of the Panel. With the turnover of Panel members since
350 2015 (only 4 current members were on the Panel in 2015), a majority of Panel
351 members may now disagree with the 2015 letter. XXXX

352 Further discussion of the proposed Advisory Opinion will be conducted during
353 Panel meetings in early 2021.

354 • **Draft Annual Report for 2020:** The Panel reviewed the 2020 Annual Report to the
355 Legislature draft available at:

356 <insert weblink here>

357 Several changes to the draft was requested, some of which State Nuclear Engineer Tony
358 Leshinski indicated would not be available until after December 31. After a brief
359 discussion, the Panel voted to approve the report and have it published once the several
360 requested changes had been incorporated.

361 • **Election of New Panel Officers:** In separate Roll Call votes, xxxxxx was elected Panel Chair
362 and xxxxxx was elected Panel Vice-Chair for terms of 1 year.

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364 IV. Major Milestones and Activities at the Vermont Yankee Site

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- 366 • 1/6 Site Decommissioning Activities resume following Holiday Break
- 367 • 1/6 Reactor Vessel (RV) Steam Separator segmentation underway; Turbine disassembly
368 Resumes; Turbine Building piping and Advanced Off-Gas (AOG) Building equipment
369 removal underway; Radioactive waste shipments via railcars resume
- 370 • 1/20 First Nuclear Regulatory Commission (NRC) onsite inspection of the year occurs
371 this week
- 372 • 1/24 Onsite First-Aid training and recertifications completed
- 373 • 1/28 Control Rod Storage Rack removed from Spent Fuel Pool for segmentation
- 374 • 2/13 RV Steam Separator Standpipes segmentation begins
- 375 • 2/24 Fabric "Big Top" storage structure erected in North Parking Lot
- 376 • 3/2 Second NRC onsite inspection of the year occurs this week
- 377 • 3/5 VT Yankee site Flu Season / COVID-19 Precautions implemented
- 378 • 3/6 Segmentation of RV Steam Separator upper half completed
- 379 • 3/10 RV Shield Plug segmentation completed
- 380 • 3/31 Northstar files required Annual VY Decommissioning Trust Fund and Spent
381 Fuel Management Fund reports

- 382 • 4/1 VY “Tabletop” Site Emergency Drills Completed
- 383 • 4/10 Segmentation of RV Steam Separator lower half completed
- 384 • 4/13 RV Feedwater Sparger Segmentation begins
- 385 • 4/30 NorthStar files NRC-required biennial Quality Procedures status report
- 386 • 5/4 Second shift for RV Segmentation work implemented
- 387 Demolition of “Shipping & Receiving” Warehouse begins
- 388 • 5/7 RV Feedwater Sparger Segmentation completed
- 389 • 5/8 Demolition of Shipping & Receiving Warehouse completed
- 390 • 5/11 RV Core Spray Sparger Segmentation begins
- 391 • 5/15 RV Steam Separator segments packaged for shipment offsite
- 392 • 5/19 Clearing of Shipping & Receiving Warehouse debris completed
- 393 • 5/20 Quarterly groundwater sampling completed
- 394 • 5/28 RV Upper Core Plate (Top Guide) removed for segmentation
- 395 • 5/29 RV Core Spray Sparger and upper Core Shroud Segmentation completed
- 396 • 6/11 Demolition of abandoned site security gatehouses completed
- 397 • 6/12 Annual site roadway assessment completed (required by Town of Vernon)
- 398 • 6/15 Reactor Control Rods (blades) segmentation and removal from RV begins
- 399 • 6/19 Truck rollover accident involving new, empty VY radioactive waste cannister
- 400 • 6/22 Third NRC onsite inspection of the year occurs this week (first since pandemic)
- 401 • 6/23 Reactor Control Rods removal from RV completed
- 402 • 6/25 NRC Early 2020 Inspection Exit Meeting – no issues, findings, or violations
- 403 • 6/25 Last equipment from Advanced Off-Gas (AOG) Building removed.
- 404 Building deemed radiologically clean
- 405 • 6/30 AOG Building demolition begins
- 406 • 6/30 Contact tracing and subsequent testing fail to find any COVID-19 cases at VY after
- 407 a site worker reports symptoms
- 408 • 7/16 First VY Low-Level Radwaste shipment using MP-197HB railcar (qualified for
- 409 high-level radwaste shipments) leaves site
- 410 • 7/22 RV Upper Core Plate (Top Guide) segmentation completed
- 411 • 7/27 Removal of Control Rod Guide Tubes and Core Plate Hold-Down Bolts begins
- 412 • 8/7 Two onsite workers test positive for COVID-19; both cases are asymptomatic.
- 413 Contact tracing and subsequent testing does not find any additional cases;
- 414 21 onsite workers isolated as a precaution
- 415 • 8/24 Fourth NRC onsite inspection of the year occurs this week
- 416 • 8/26 Quarterly groundwater sampling completed
- 417 • 9/17 Plant Support Building well implemented as site-wide potable water supply
- 418 • 9/28 Plant Support Building well water certified as site drinking water supply
- 419 • 10/2 Control Rod Guide Tubes and Core Plate Hold-Down Bolts removal completed
- 420 • 10/7 Disassembly of (steam plant) Electric Generator begins
- 421 • 10/8 Core Plate removed from RV for segmentation
- 422 • 10/13 Fifth NRC onsite inspection of the year occurs this week
- 423 • 10/14 Required NRC triennial inspection of spent fuel dry casks and dry cask storage

- 424 pads completed
- 425 • 10/19 RV Core Spray Piping removal begins
- 426 • 10/22 RV Core Plate segmentation begins
- 427 • 11/2 RV Core Spray Piping removal completed
- 428 • 11/3 Disassembly of Main and Auxiliary Transformers begins
- 429 • 11/5 RV In-Core Instrumentation Piping removal begins
- 430 Demolition of Advanced Off-Gas Building (above ground portion) completed
- 431 • 11/9 Demolition of Turbine Building South End (former site maintenance shop) begins
- 432 • 11/13 Removal of Main and Auxiliary Transformers completed
- 433 • 11/18 Onsite Radiological Emergency Drill Completed
- 434 • 11/19 Quarterly groundwater sampling completed
- 435 • 12/2 Demolition of Turbine Building South End completed
- 436 • 12/7 Sixth and final NRC onsite inspection of the year occurs this week
- 437 • 12/10 NRC Late-2020 Inspection Exit Meeting – no issues, findings, or violations
- 438

439 **V. Nuclear Decommissioning Trust (NDT) and Site Restoration Trust (SRT) Fund Updates**

440 *(based on latest available data for 2020).*

441	442 NDT	442 SRT
443	\$428.3 M Balance on December 31, 2019	\$62.3 M Balance on December 31, 2019
444	\$425.4 M Balance on March 31, 2020	\$64.4 M Balance on March 31, 2020
445	\$407.9 M Balance on June 30, 2020	\$64.2 M Balance on June 30, 2020
446	\$389.5 M Balance on August 31, 2020	\$63.7 M Balance on August 31, 2020
447	\$3XX.X M Balance on September 30, 2020	\$6X.X M Balance on September 30, 2020
448	\$3XX.X M Balance on December 31, 2020	\$6X.X M Balance on December 31, 2020

449

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

451 [https://publicservice.vermont.gov/content/trust-balances.](https://publicservice.vermont.gov/content/trust-balances)

452

453 Summaries of monthly expenditures for the Vermont Yankee Decommissioning Project are

454 available: [https://publicservice.vermont.gov/content/public-reports.](https://publicservice.vermont.gov/content/public-reports)

455

456 **VI. Spent Nuclear Fuel Status at Vermont Yankee**

457 Transfer of VY’s entire spent fuel inventory to dry cask storage was completed on August 1,

458 2018. No changes to VY’s spent fuel storage have occurred since then. A total of 58 dry casks,

459 holding a total of 3,880 spent fuel assemblies, are stored at the VY Independent Spent Fuel

460 Storage Installation (ISFSI). VY’s spent fuel will remain stored at the VY ISFSI until such time

461 that the US Department of Energy fulfills its obligation to provide a national spent nuclear fuel

462 repository.

464 A total of 7 vacant cask spaces remain on the ISFSI pads. Four of these are required should the
465 arrangement of the dry casks on the two ISFSI pads need to be changed for any reason. The
466 remaining three spaces are designated for storing Greater than Class C (GTCC) Low Level
467 Nuclear Waste (e.g. highly contaminated VY Reactor Vessel internal components) resulting from
468 VY's active decommissioning. It is currently anticipated that the GTCC Nuclear Waste from VY's
469 decommissioning can be stored in one GTCC waste container. A GTCC waste container will be
470 loaded and moved to the VY ISFSI in the future. Since no US low level radioactive waste disposal
471 facilities are currently licensed to accept GTCC waste, all VY GTCC waste must be stored onsite.

472

473 **VII. Significant Vermont Yankee Site Changes**

474 Monitoring of the Vermont Yankee Spent Nuclear Fuel is controlled from the site's Central Alarm
475 Station (CAS) Building, which became operational on August 23, 2018. No significant changes to
476 Vermont Yankee's spent fuel monitoring programs occurred during 2020. All Vermont Yankee
477 site changes that occurred during 2020 were the result of continuing decommissioning activities
478 which commenced on January 11, 2019.

479 The following onsite structures were demolished during 2020:

- 480 • The "Shipping and Receiving" Warehouse (last onsite warehouse structure)
- 481 • Abandoned 75,000 gallon Fuel Oil Storage Tank
- 482 • Two abandoned site security (North and West SOCA) gatehouses
- 483 • The Advanced Off-Gas (AOG) Building
- 484 • The abandoned Main and Auxiliary (power transmission) Transformers
- 485 • Turbine Building South End (former onsite equipment maintenance shop)
- 486 • Majority of fencing and vehicle barricades surrounding the "power block" buildings
487 removed

488

489 The concrete pads for the Shipping and Receiving Warehouse and the AOG Building remain in
490 place. The below grade structures for the AOG Building and the Transformer pad also remain in
491 place. Fencing and vehicle barricades along the VY property line remain in place. None of these
492 changes impact the security barriers surrounding the VY ISFSI.

493

494 Road repairs at VY's main entrance have been made. The rail crossing adjacent to the Plant
495 Support Building has been upgraded.

496

497 Plant Support Building water well is now being used as the potable water supply for the entire
498 VY site.

499

500 **VIII. Vermont Yankee Water Management Program**

- 501 • The rate of groundwater entering the Turbine Building is consistent with rates seen in 2018
502 and 2019.

- Seasonal variations to date produced a rate range between 200 and 300 gallons per day (consistent with low end of the rates range seen during 2018 and 2019)
- At End of Year the rate was below 300 gallons per day (last reported as 250 gallons per day as of 11/24/2020; similar to the 2017 and 2019 end of year rates).
- Over 90% reduction in leakage since 2015 (consistent with 2018 and 2019 rates)
- Roughly 153,600 gallons have shipped in 2020
 - 46,000 gallons of which have shipped to Waste Control Specialists (WCS) NRC-licensed disposal site in Andrews County, Texas.
 - 107,600 gallons have shipped to US Ecology’s hazardous waste disposal facility in Grandview, Idaho. (Vermont Yankee was licensed by the NRC to ship up to 200,000 gallons of contaminated water to this facility; Shipment of 107,600 gallons was permitted in 2020 after 92,400 gallons were shipped to this facility in 2019.)
 - All 2020 water shipments made were via tanker rail cars; 7 rail shipments in total.
 - Groundwater shipments to WCS and US Ecology facilities continue “as-needed.”
- A total of >1,055,000 gallons have been shipped to date
- Onsite water storage (using VY’s former Condenser) can hold water as much as 820,000 gallons of contaminated water, if necessary, until appropriate disposal arrangements are made.
- No water discharges to the Connecticut River have occurred.
- A system of water diversion wells along the Turbine Building periphery has been installed to mitigate the need for future water shipments. A water discharge permit is under Department of Environmental Conservation review that would allow diverted, uncontaminated water to be discharged to the Connecticut River.

527 IX. Decommissioning Waste Shipments Summary

528
529 A summary of radiological and hazardous waste shipments made from the Vermont Yankee site
530 during 2020 follows.

531 IX.A Radioactive Waste Shipments Summary

532
533 An annual summary of Vermont Yankee’s radioactive waste shipments is published in mid-May
534 of the following calendar year as part of the “Radioactive Effluent Release Report” filed with the
535 US Nuclear Regulatory Commission and the Vermont Public Service Department. Preliminary
536 radioactive waste volume data available as of December 31, 2020 indicates that approximately
537 >350,000 cubic feet of radioactive waste was shipped from the Vermont Yankee site during
538 2020 (significantly higher than the 144,907 cubic feet of radioactive waste shipped in 2019).
539 The total weight of the waste shipped in 2020 is > 19,000,000 pounds (>9,500 tons). Excluding
540 the contaminated water shipments to US Ecology reported in Section VIII herein, all 2020
541 calendar year radioactive waste shipments were sent to Waste Control Specialists’ (WCS)
542 disposal facility Andrews County, Texas. Excluding one shipment made by truck, all 2020
543 calendar year shipments were made via railcar.

544

545 In response to Public questions at the September 21, 2020 Panel meeting, the total activity of
546 radioactive waste stored at the VT Yankee site is estimated as follows:

- 547
- 548 • Total activity stored at the VY Independent Spent Fuel Storage Installation (ISFSI), consisting
549 of 3880 spent fuel bundles stored in 58 spent fuel canisters: 117,176,000 Curies
 - 550 • The Greater Than Class C radioactive waste cask to be stored at the VY ISFSI will contain
551 approximately 150,000 Curies once loaded.

552 The majority of the remaining radioactive waste to be shipped offsite with significant
553 radioactivity is comprised of select Reactor Vessel internal components. These components are
554 expected to contain approximately 21,000 Curies.

555

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

557

- 558 • 1521 tons of construction and demolition debris was shipped to the following facilities:
 - 559 ○ Western Recycling, Wilbraham, MA
 - 560 ○ Millbury C&D Processing Station, Millbury, MA
- 561 • 537 cubic yards of asbestos was shipped to the following facilities:
 - 562 ○ Minerva Landfill, Waynesburg, OH
 - 563 ○ Waste Management of New Hampshire, Rochester, NH
- 564 • 237 tons of scrap metal was shipped to the following facility for recycling:
 - 565 ○ Mattuchio Scrap Metal, Everett, MA

566

567 **X. Vermont Congressional Delegation**

568

569 Representatives of Senator Patrick Leahy, Senator Bernie Sanders, and Congressman Peter
570 Welch attended several NDCAP meetings in 2020. At the September 21, 2020 meeting, Ms. Haley
571 Pero of Senator Sanders' office provided a verbal update on the recent bills proposed in Congress
572 that, if enacted, would impact the overall reactor decommissioning process within the United
573 States. (This summary begins at 2:10:09 in the meeting's video recording.)

574

575 Senator Sanders and Congressman Welch recently introduced the Nuclear Plan
576 Decommissioning Act (co-sponsored by Senator Leahy) provides a meaningful role for states in
577 the development and approval of nuclear power plant shutdown plans and post-shutdown
578 license transfers. The act has been proposed in prior Congresses, but the current version
579 incorporates feedback received in last year's nuclear decommissioning panel "best practices"
580 meetings. The current version of the bill includes funding provisions for panels such as VT-
581 NDCAP. The bill also provides regional economic development grants. The bill also includes
582 compensation to communities such as Vernon, VT for storing spent nuclear fuel.

583

584 Bills not approved during the current Congress (i.e. by the end of 2020) would need to be
585 reintroduced in the new Congressional session next year. Several additional bills co-sponsored
586 by Senator Sanders were briefly described:

- 587 • Informed Consent Act – requires the Department of Energy to receive local and tribal
588 government consent before opening a nuclear fuel repository within their jurisdictions.
- 589 • STRANDED Act – would compensate local communities for storing spent nuclear fuel.
- 590 • Dry Cask Storage Act – would require nuclear power plants to move all spent fuel to
591 dry cask storage within seven years. Noncompliant facilities would have their
592 emergency planning zones expanded to 50 miles.

593 Additional bills not co-sponsored by Senator Sanders include:

- 594 • Nuclear Waste Administration Act – would create a new national agency solely for
595 managing spent nuclear fuel. This bill includes provisions for creating a national spent
596 fuel repository and would allow for consolidated interim storage provided that work on
597 a permanent repository continues. The date for opening a permanent repository would
598 be set as 2052.
- 599 • Nuclear Waste Policy Amendments Act – would allow private entity interim waste
600 storage facilities provided that local government consent was obtained.
- 601 • Jobs not Waste Act – prohibits Department of Energy from acting on Yucca Mountain
602 until a report on job-creating alternative uses for the Yucca Mountain site is produced.
603 Congressional hearings on alternate uses of the site would also be required.

604

605 Trump Administration budget requests for spent fuel storage were briefly highlighted. Early
606 Administration budget proposals included requests for Yucca Mountain funding. More recent
607 proposals have included requests for consolidated interim storage funding, but nothing for
608 Yucca Mountain. The budget compromises with Congress have not included funding for either
609 option.

610

611 **XI. The Issues Committee of NDCAP**

612

613 The Issues Committee, formed in 2015 and reconstituted in 2019, provides recommendations
614 for topics to be discussed at meetings of the Full Panel. The following Panel members served on
615 the Issues Committee during 2020: Josh Unruh, Lissa Weinmann, Madeline Arms, Chris
616 Company, Sara Coffey, Corey Daniels, Bob Leach, and Laura Sibia. Several additional Panel
617 members also participated in at least one of the Issues Committee meetings held during 2020:
618 David Pearson, Emily Davis and Marvin Resnikoff.

619

620 The Issues Committee met three times during 2020, in April, June and November. In addition to
621 identifying topics for discussion at Full Panel meetings, the Committee drafted the meeting
622 agendas for the May, September and December Full Panel meetings. Additional topics discussed
623 during Issues Committee meetings included whether the Panel can and should take up
624 discussions on national issues such as Consolidated Interim Storage of spent fuel in other parts
625 of the United States. The Committee also discussed whether the Panel should consider
626 publishing Advisory Opinions on these topics. Written summaries and audio / webcast
627 recordings of the Issues Committee meetings are available at the NDCAP website.

628

629 **XII. Meeting Schedule and Priorities for 2020**

630

631 During the Panel's December meeting, it was agreed that the Panel will meet as / more
632 frequently than it did in 2020. It is anticipated that most, if not all, of the Panel's meetings in
633 2021 will be conducted as webcasts due to the continuing COVID-19 pandemic. More frequent
634 meetings will reduce the overall length of individual Panel meetings. Date selections for
635 individual meetings will be influenced by reporting requirements in the Vermont Yankee Sale
636 Agreement (PUC Docket 8880 Approval Order, CPG and MOU) and significant milestones during
637 Vermont Yankee's active decommissioning and site restoration.

638

639 To this end, the Panel agreed to meet on January XX, 2021; the primary focus of this meeting will
640 be finalizing and approving the 2020 Annual Report to the Legislature. The Panel also agreed to
641 meet on February xx, 2021 to resume the Panel's typical business of receiving updates on
642 Vermont Yankee's active decommissioning and site restoration. The Panel will likely meet in
643 early to mid-May, 2021 to receive summaries and State Agency evaluations for the March 31,
644 2020 annual reporting required by the Vermont Yankee Sale Agreement. Scheduling of
645 subsequent Panel meetings to assure the required number of Panel meetings occur in the 2021
646 calendar year will be decided during Full Panel meetings in early 2021.

647

648 Continuing discussion that began at the May 2020 Full Panel meeting, the Panel will further
649 consider whether it should attempt to address national spent fuel issues.

650

651 **XIII. Panel Composition and Duties Change Recommendations**

652

653 Consistent with Panel Duties outlined in Part II of the Panel Charter (see Section II of this
654 Report), the Panel "shall assess further changes to the Panel's membership or duties as
655 appropriate." Discussion on potential Panel composition and duties changes occurred at several
656 Full Panel and Issues Committee meetings held in the latter half of 2019. At its January 13, 2020
657 meeting, the Panel created several changes to the Vermont Legislation establishing the Panel (18
658 VSA §1700 to §1702) based on these discussions. The Panel's February 3, 2020 meeting
659 centered on means for funding Panel activities other than the Public Service Department's
660 budget. Additional proposed changes to the Legislation establishing the Panel resulted.

661

662 The proposed Panel composition and duty changes approved at the Panel's January and
663 February meetings are summarized in House Bill H.740, which is available online at:

664

665 <https://legislature.vermont.gov/bill/status/2020/H.740>

666

667 While these changes were approved by the Vermont House in 2020, they were not approved in
668 the Senate during the 2020 Session. The Panel requests that House Bill H.740 be reintroduced
669 during 2021 Session for further consideration.