NUCLEAR DECOMMISSIONING CITIZENS ADVISORY PANEL
PUBLIC SERVICE DEPARTMENT

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

2021

Published: January 2022
(Approved by the Panel on January 10, 2022)

Yellow highlighted portions of this report draft identify unchanged items from the December 17 draft that could change based on direction from the Panel. Blue highlighted text show changes that have occurred based on comments or updates received since December 17, 2021.
I. Statutory Authority and Duties

The nineteen-member Vermont Nuclear Decommissioning Citizens Advisory Panel ("NDCAP" or 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 outlined in this Act, which is available online at:


Membership and duties of NDCAP were modified during the 2021 legislative session as part of Act 54, (Section 13, pages 11 through 16 of the Act). Details on the current membership and duties of NDCAP are available online at:


The list of current members of the Nuclear Decommissioning Citizens Advisory Panel may be found at http://publicservice.vermont.gov/electric/ndcap (aka, the NDCAP website). Changes in Panel membership during 2021 may be discerned by reviewing the meeting minutes and meeting recordings available at the NDCAP website.

II. Charter

The NDCAP Charter was adopted on February 25, 2015, and amended on May 26, 2016. The current Charter is available at:


No changes to the NDCAP Charter were made during 2021. However, revision to the NDCAP Charter is likely necessary due to the changes in Panel membership and duties implemented in Act 54 of the 2021 Legislative Session. NDCAP will review and update its Charter during calendar year 2022 to align it with Act 54 changes.
III. Meeting Highlights

The NDCAP held four meetings in 2021; meetings were held in April, June, September, and December. All meetings were open to the public and opportunities for public comments were provided. In response to the COVID-19 pandemic, the April and June meetings were conducted entirely as Microsoft Teams webcasts. The September and December meetings were conducted primarily as Microsoft Teams webcasts. However, in compliance with Open Meeting Law, a physical meeting space was available in downtown Brattleboro for these latter meetings.

All meetings included updates on recent VY decommissioning activities by both NorthStar and the State of Vermont. Educational and issue-specific topics were also discussed. Several of the issue-specific topics centered on Panel meeting logistics moving forward. Opportunities for discussion and comments from Panelists and the public on all covered topics were provided during each meeting. A summary of each meeting is presented below.

The minutes of each meeting can be found on the NDCAP website (a dedicated section of the Public Service Department website) at http://publicservice.vermont.gov/electric/ndcap. A complete video or webcast recording for each meeting can be found at:


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 recently launched “VY Decommissioning” website at:

https://publicservice.vermont.gov/content/vermont-yankee-decommissioning

April 12, 2021

The Panel’s first meeting of the year was originally scheduled for March 15. However, due to world-wide connectivity issues with the Microsoft Teams platform that evening, the meeting was rescheduled to April 12. At the start of the April 12 meeting, Panel Chair Emily Davis noted that Paul Wolossow was appointed as the Panel’s New Hampshire Towns representative prior to the planned March 15 meeting. Unfortunately, Mr. Wolossow subsequently passed away during the week of March 28.

- NorthStar Update on VY Site Decommissioning Activities:
  Panelist Corey Daniels, VY’s Senior Spent Fuel Storage Manager, provided a presentation that outlined ongoing decommissioning activities. Progress on Reactor Vessel (RV) segmentation was described. While RV segmentation is behind schedule, Orano continues to perform high-quality work on the task. No significant impact to the overall project schedule is anticipated. Segmentation of the Core Shroud cylinder is nearing completion, which is one of the last difficult component segmentations to be completed. Recent Control Rod Guide Tubes segmentation and waste packaging was also discussed. Current Turbine Building (TB) demolition and equipment removals were described; the current work includes removal of the Feedwater Heaters, disassembly of the Condenser and
removal of Emergency Diesel Generator Rooms equipment. The planned removal of the 500,000 gallon Condensate Storage Tank was discussed. In response to Panelist questions, onsite storage plans for VY’s Greater-than-Class C radioactive waste were also discussed. In response to a series of questions from the public, additional details on VY’s radioactive waste shipment activities were described.

• **State of Vermont Decommissioning Activities:**
  Gerold Noyes, Environmental Engineer in the Department of Environmental Conservation’s (DEC’s) Waste Management and Prevention Division outlined the Agency of Natural Resources (ANR) / DEC’s ongoing interactions with VY: regular (biweekly) status calls, draft permit and corrective action plan reviews. Information from these communications is available from both the NorthStar and ANR websites. Quarterly groundwater sampling, and the VY site post-demolition sampling plan were discussed. DEC’s approval of an onsite groundwater intercept well system, which would divert groundwater from entering the Turbine Building and becoming contaminated, was discussed. After confirming that the diverted water is clean, the collected groundwater will be discharged to the Connecticut River.

  No new contamination areas have been found onsite thus far; however more sampling will be done as more site structures are demolished, allowing more areas to be sampled. Onsite asbestos abatements are largely complete.

  Panel Member Dr. Bill Irwin, Vermont Radiological and Toxicology Sciences Chief, outlined Vermont Department of Health oversight at VY. Health’s sampling and monitoring programs for air, milk, groundwater, sediments, fish and water supplies within the Vernon and Brattleboro vicinities were described. Monitoring program results are available at [https://www.healthvermont.gov/health-environment/radiological-health/vermont-yankee](https://www.healthvermont.gov/health-environment/radiological-health/vermont-yankee). Health’s support in DEC’s oversight of VY activities was also discussed. Despite the Pandemic, Health was able to conduct several onsite inspections during 2020. Health was significantly involved in ANR’s water discharge permit process for Vermont Yankee. Thus far, the decommissioning project has not had an adverse environmental impact.

  Eric Guzman, Special Counsel in the Vermont Public Service Department outlined the Department’s monitoring of the VY Decommissioning Project since the Panel’s December 2020 meeting. Reviews conducted by Four Points Group, the Department’s consultant for VY Decommissioning oversight was also discussed. In general, the expenditures thus far on the project are consistent with the project’s observed progress. NorthStar remains on track to complete the project with available funding. NorthStar’s required annual project certification report and financial disclosures were received on March 31, which the Department is currently reviewing.
• **Discussion of Federal Nuclear Waste Policy Committee Activities:**

Lissa Weinmann, Chair of the Panel’s Federal Nuclear Waste Policy Committee, briefly outlined the Committee’s activities during its first several meetings. The Committee has been compiling a reading list of relevant materials to help them come-up to speed on various nuclear waste policy issues. This reading list is included on a webpage that has been created for the Committee: [https://publicservice.vermont.gov/content/vt-ndcap-federal-nuclear-waste-policy](https://publicservice.vermont.gov/content/vt-ndcap-federal-nuclear-waste-policy).

Nuclear waste policy issues being considered by the Committee include Yucca Mountain, Consolidated Interim Storage, Nuclear Waste Transportation, the durability of Interim Nuclear Waste Storage Facilities (ISFSIs) and potential community compensation for hosting an ISFSI. The Committee plans to have recommendations for potential Advisory Opinions on these subjects for Panel consideration by the end of this year.

The Committee has been meeting monthly, typically on the third Monday of the month, and tries to limit its meetings to one hour. Much of the Committee’s efforts is actually “homework” outside of the Committee meetings. The Committee has made arrangements to have invited speakers briefly present on Committee Topics.

• **Overview of Texas Compact Commission Contingency Planning Report:**

State Nuclear Engineer Tony Leshinskie reported that the Texas Compact Commission is required to publish a Contingency Planning Report to comply with Federal and State of Texas law. The report recommends that low-level radioactive waste producers maintain a contingency plan for alternate waste disposal in case the Compact Facility becomes unavailable for whatever reason. Of particular concern is Class B and Class C low level waste because there are no other licensed facilities in the US that can accept these waste classes. While active and decommissioning nuclear power plants have the ability to store Class B and C wastes for some period of time, other waste producers may not. Tony indicated that he will work with NorthStar and the Department of Health in coordinating a contingency plan for all Vermont radioactive waste producers. The Compact Facility does not currently foresee any reason why it would become unavailable; however, planning for this potential contingency needs to be done.

• **Status Report on Panel Legislation:**

Panel Members and Vermont House Representatives Sara Coffey and Laura Sibilia briefly outlined the status of their bill to realign the Panel’s composition and provide a funding source for the Panel. This bill was the result of several Panel discussions in late 2019 and early 2020. The Panel voted on the wording of the bill in February 2020 and it was introduced to the Legislature. Due to other priorities (particularly the response to the Pandemic), the bill did not come to a Senate vote in 2020. The bill was reintroduced this year and has again passed the House (part of House Bill H.431,
The bill has been referred to the Senate Finance Committee, which has yet to take testimony on the bill.

- **Potential Revamp of Panel Website:**
  Panel Chair Emily Davis requested that Panel members review the Panel’s website (https://publicservice.vermont.gov/electric/ndcap) and consider whether there are ways to improve its usefulness to the Panel and the public. Panel member and Public Service Commissioner June Tierney cautioned that there may be limits on what can be done to update the website due to the current strain on PSD resources and the State’s standards for official websites.

- **Scheduling 2021 Panel Meetings:**
  The Panel agreed to meet on June 14, September 20, and December 6.

**June 14, 2021**

- **NorthStar Update on VY Site Decommissioning Activities:**
  NorthStar Panelist Corey Daniels summarized decommissioning activities completed since April 2021. (Slides for this presentation are available from the Panel’s website.) Progress on Reactor Vessel (RV) segmentation was described. RV core shroud segmentation is nearing completion. Segmentation of the RV shroud cylinder is done. The remaining steps in the RV segmentation project are to remove the RV jet pumps, segment the RV nozzles and then begin segmenting the RV itself. Degraded water clarity, which reduces visibility while conducting segmentation tasks, was noted, but thus far, this has not significantly impacted the project. Progress in clearing Turbine Building equipment and preparation for demolishing the Administrative Offices Building were described.

- **Assessment of NorthStar 2020 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.) Review of NorthStar’s required annual financial disclosures identified no causes for concern. The expenditures thus far on the project are consistent with the project’s observed progress. NorthStar remains on track to complete the project with available funding. It was noted that the Vermont Yankee indirect license transfer case before the Vermont Public Utility Commission is currently stayed pending a submittal change from the Petitioners (NorthStar ownership).

- **Department of Environmental Conservation Update:**
  Gerold Noyes, Environmental Engineer in the Department of Environmental Conservation’s (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. Additionally, ANR / DEC staff visited the VY site on June 2, which allowed Panelist Patricia Coppolino and DEC's Anna Bourakovsky to observe site activities first-hand. (Both are new to working on VY oversight.) Quarterly groundwater sampling was also observed during this site visit. Some PFAS contamination has been found onsite, most likely due to an onsite transformer fire that occurred years ago. No site-wide contamination is expected from this finding. No other, new contamination areas have been found onsite; however, as more site structures are demolished, this will allow more areas to be sampled. Onsite asbestos abatements are largely complete.

During Panel Questions: Marvin Resnikoff voiced concerns that the radwaste volumes reported from the RV segmentation, particularly the Greater-than-Class C (GTCC) waste volumes are low. He has requested that NorthStar provide details on its radwaste measurement methods. Corey Daniels replied that while NorthStar has attempted to answer Marvin's questions, some of the requested information is proprietary. They may not be able to fully answer the questions as a result. Corey noted that some of the questions are based on 40-year-old NRC estimates. Lissa Weinmann asked whether some of the site's uncontaminated equipment can be sold for reuse rather than for scrap. Corey Daniels replied that while attempts to resell equipment have been made, the loss of quality assurance pedigrees when the equipment was abandoned makes resale difficult. In many instances, it is cheaper for a buyer to purchase new equipment than reestablishing the required pedigrees for old equipment.

In response to questions from the Public: Gerold Noyes clarified that onsite PFAS contamination is limited to the immediate vicinity of the transformer fire and nowhere else. In response to additional public questions, Corey Daniels noted that disposal locations for VY's non-radiological waste is tracked. Gerold added that DEC also tracks this through current State rules. Corey also noted that NorthStar plans to use current NRC radioactivity limits for radwaste disposal rather than any that may result from new NRC rulemaking.

Discussion of Federal Nuclear Waste Policy Committee Activities:
Lissa Weinmann, Chair of the Panel's Federal Nuclear Waste Policy Committee, briefly outlined the Committee's activities during its first several meetings. The Committee continues to compile relevant materials on several nuclear waste policy issues, particularly Yucca Mountain and Consolidated Interim Storage. Compiled materials are available at: https://publicservice.vermont.gov/content/vt-ndcap-federal-nuclear-waste-policy.

The May Committee meeting featured an excellent discussion with Mark Holt of the Congressional Research Service that summarized nuclear waste policy bills that have been proposed in Congress over the past several years. It is expected that many of these bills will be offered again. The Committee is investigating whether Vermont should formally...
support these efforts or any of the proposed Nuclear Waste Policy changes that the Biden
Administration is currently considering.

• **Status Report on Panel Legislation:**
Panelist Sara Coffey reported that H.431 was signed into law on June 3 as Act 54 of the
2021 Legislative Session. The NDCAP-related portions of the Act are effective July 1. The
Act provides the Town of Vernon with an additional representative on the Panel (two
representatives in total) and a $35,000 annual budget for the Panel. The Panel briefly
discussed potential uses for this budget. Initial suggestions included purchasing of
hardware to support Panel meetings and bringing in subject matter experts to speak at
Panel Meetings. Panel Chair Emily Davis committed to making a first draft of a Panel
budget for discussion at a future meeting.

• **Formats for Future Panel Meetings:**
The Panel discussed logistics for upcoming Panel meetings. With COVID-19 emergency
measures lifted, future Panel meetings once again require a physical meeting space (for
compliance with Open Meeting Law). Pre-pandemic meeting sites were typically school
facilities, which may remain unavailable for the rest of 2021. A few Panelists expressed a
desire to return strictly to in-person meetings, but it was agreed that the Panel would
adopt a hybrid meeting approach that would allow Panelists travelling from other parts of
the state to instead join meetings through a webcast. State Nuclear Engineer Tony
Leshinskie noted that whatever meeting space is used, it will need to have high-speed
internet access to assure that the webcast runs smoothly. Some concern was expressed
that using webcasts was straining the Panel’s public outreach. More outreach by the Panel
is needed. Several potential meeting sites were discussed, but it was agreed that a specific
meeting site would need to be determined at a later date, but in time for the Panel’s
planned September 20 meeting.

**September 20, 2021**

Due to the lifting of Pandemic countermeasures in June, this was the Panel’s first meeting since
early 2020 for which a physical meeting space was available. Most Panel members and all public
attendees joined this meeting via webcast.

• **Texas Low Level Radioactive Waste Disposal Compact (TLLRWDC) Commission**
TLLRWDC Compact Commissioner Peter Bradford, one of Vermont’s two Commissioners
for the TLLRWDC, outlined the Compact’s history and purpose. An overview of the
Compact’s Low Level Radioactive Waste (LLRW) Disposal Facility and its operations was
provided. Interactions between the Disposal Facility and the Texas Commission on
Environmental Quality, which regulates the facility’s safety and environmental impact, was
also discussed. (Slides for this presentation are available from the Panel’s website.)
Commissioner Bradford answered questions provided by Panel members and the public
on the Compact’s positions on several radioactive waste disposal and details of the
Disposal Facility’s operations. Some of this discussion centered on the NRC’s recent
(September 13) approval of an Orano / Waste Control Specialists request to construct and
operate a Consolidated Interim Spent Fuel Storage Facility adjacent to the Compact’s LLRW Disposal Facility. The Compact has no position on the Interim Storage Facility; its operation would be outside the scope of the Compact’s jurisdiction. It was noted that the Compact’s Low Level Radioactive Waste (LLRW) Disposal Facility and its operator, WCS, has undergone some financial difficulties in recent years. However, based on Commission assessments, it is likely that the Disposal Facility and WCS will continue to remain operable and available to accept all low-level radioactive waste from VY’s decommissioning. Additional details for this presentation are available from the Meeting Minutes and Meeting Recording available at the Panel’s website (https://publicservice.vermont.gov/electric/ndcap).

- **Discussion of Federal Nuclear Waste Policy Committee Activities:**
  Lissa Weinmann, Chair of the Panel’s Federal Nuclear Waste Policy Committee, discussed the draft report that the Committee published on the on the Panel website. This report is available at https://publicservice.vermont.gov/sites/dps/files/documents/Final_Nuclear_Waste_Committee_Update_2021_NDCAP_Rev2.pdf.

  The report summarizes many of the items that the Committee has examined thus far and discussions that have occurred at its monthly meetings. The Committee requests that Panel members review the draft and provide feedback to the Committee.

  The draft report highlights several potential topics where common ground among the Panelists may be possible for an Advisory Opinion.

  Additionally, the Panel may want to support the new US House Caucus for spent nuclear fuel solutions. A restart is needed on a national integrated spent fuel management system, as is a reexamination of deep geological repository requirements. Currently, there are no such repositories operating anywhere worldwide, although Finland and China are each close to opening one.

  The Committee expects to have at least one Advisory Opinion draft available for consideration by the end of the year.

- **NorthStar Update on VY Site Decommissioning Activities:**
  NorthStar Panelist Corey Daniels summarized decommissioning activities completed since June 2021. (Slides for this presentation are available from the Panel’s website.) It was noted that the VY site recently exceeded 1,000,000 person-hours worked (since NorthStar took ownership of VY on January 11, 2019) without an OSHA Recordable Lost Time Accident. Progress on Reactor Vessel (RV) segmentation was described. Removal of RV internal components is essentially complete. Preparations for segmenting the RV nozzles and the RV itself have commenced. Efforts to removed expended cutting media, which is degrading water clarity, were discussed. Clearing of Turbine Building equipment
continues. Recent additional structure demolitions were also described, including
demolition of the Effluent Stack, component removals at the River Intake Structure and
the demolition of the remaining onsite radwaste processing and other system tanks. A
walk-through of a radwaste transfer from the Reactor Building to shipment offsite via a
dedicated railcar was also described

Groundwater discharge from VY's several diversion wells to the Connecticut River occurs
in accordance with the river discharge permit approved by the DEC. Discharges are
typically 15,000 gallons per day when they occur.

- **Department of Environmental Conservation Update:**
  Gerold Noyes, Environmental Engineer in the Department of Environmental
  Conservation's (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. Quarterly groundwater sampling for non-
radiological contaminants continue to show no area-wide contamination issues at the VY
site. The next sampling is scheduled for September 22. No new contamination areas
(including potential PCB contaminations) have been found onsite; however, as more site
structures are demolished, this will allow more areas to be sampled. A modification to the
site's potable water system, required for demolishing the Administrative Offices Building,
was discussed.

- **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. (Slides for this presentation are available from the
  Panel's website.) The expenditures thus far on the project are consistent with the
  project's observed progress. NorthStar remains on track to complete the project with
  available funding. It was noted that the Vermont Yankee indirect license transfer case
  before the Vermont Public Utility Commission is currently stayed at the Petitioner's
  (NorthStar ownership) request.

- **During Panel Questions:** Lissa Weinmann asked whether all underground piping at the
  site had been removed. Corey Daniels answered no. To date, the bulk of piping removals
  have been from the interior of the Turbine Building. The Turbine Building needs to be
taken "cold and dark" to assure that underground piping and other large below grade
components can be removed safely. Portions of the Turbine and Reactor Buildings that
still require electricity need to be transferred to "street power" (i.e., the local power grid)
before these removals can start. Efforts for this transition have begun.
Potential Panel Budget Uses:

Panel Chair Emily Davis provided a first draft of a proposed Panel budget, which is available at:
https://publicservice.vermont.gov/content/2022-proposed-ndcap-budget

In addition to covering current Panel meeting expenses such as space rental and meeting recording fees, the budget proposes additional expenditures such as meeting infrastructure (e.g., a better projector for meeting presentations), a potential upgrade to the Panel’s website, and possibly a transcription service for generating the meeting minutes. A Panel staff person was also proposed to assist in meeting promotion (press releases, additional social media, etc.). A line item for the State Nuclear Engineer’s time supporting the Panel was also included. Public Service Commissioner June Tierney noted that any Panel staff and the State Nuclear Engineer’s salary were within the Public Service Department’s budget and outside of the Panel’s $35,000 annual budget allocation. Ensuing discussion determined that the Panel initially intended to use its budget to alleviate some of the State Nuclear Engineer’s administrative burdens from the Panel. (It was noted that the State Nuclear Engineer’s supervision for these tasks was still essential to assure they are properly carried out.) Consensus was reached that some of the budget should be used for improving the Panel’s website. (It was noted that all website changes would need to comply with Vermont State standards for official websites.) Budget would also be allocated to make subject matter experts available to the Panel. Some discussion on whether Panel stipends could be increased occurred. But it was recognized that increasing the current stipend for Panel volunteers would require action by the Legislature. Based on this discussion, Panel Chair Emily Davis committed to revising the Panel budget draft for further discussion at a future meeting.

December 6, 2021

During Panel Member roll call, it was noted that the website for Massachusetts State Representative Paul Mark (Massachusetts Towns representative for the Panel) indicates that he has stepped down from NDCAP. Several letters have been sent to the Massachusetts Governor’s Office requesting that a replacement be named.

Review of Panel Charge and Purpose / Panel Draft Budget:

The latest version of the Panel FY 2022 budget is included in the Panel Duties and Budget Notes available at: https://publicservice.vermont.gov/content/ndcap-duties-and-budget-notes-dec-6-discussions.

The Panel’s duties center on disseminating information on Vermont Yankee decommissioning activities and assuring that public can ask questions or voice concerns about these activities. In short, the Panel’s purpose is public outreach. Emily Davis noted that the proposed budget allocations reflect the Panelists’ desires to enhance its public outreach and allow Panel members to be better informed on decommissioning-related topics. The proposed budget allocates funds for improving the Panel’s website, potentially expanding meeting publicity, improving electronic access to meetings and
assuring that high-quality meeting recordings remain available. The budget also allocates honoraria for experts speaking to the Panel. This last item would be in lieu of allocations for Panel members to attend decommissioning conferences. Some discussion on Panelists potentially attending decommissioning conferences and how or whether expenses for such conferences could be covered by the Panel’s $35,000 annual budget ensued. However, with no specific conferences in mind, no consensus was reached. General agreement was reached that the current budget draft has sufficient detail for the Panel to use its current budget. Additional details for specific expenses can be addressed during the Public Service Department’s approval process for individual expenses.

- **Panel Current Public Engagement / Participation:**

An outline of the Panel’s current public engagement practices is included in the Panel Duties and Budget Notes available at: [https://publicservice.vermont.gov/content/ndcap-duties-and-budget-notes-dec-6-discussions](https://publicservice.vermont.gov/content/ndcap-duties-and-budget-notes-dec-6-discussions).

Public engagement currently consists of notifications / publications on the Panel website ([https://publicservice.vermont.gov/electric/ndcap](https://publicservice.vermont.gov/electric/ndcap)), press releases for upcoming meetings, and redistribution of the press releases to a voluntary public interest email distribution list. The Panel discussed the potential enhancements in public outreach identified in the draft budget.

**Meeting Webcast Platform:** Panel Chair Emily Davis indicated that she and State Nuclear Engineer Tony Leshinskie have discussed having Brattleboro Community Television (BCTV) run the meeting webcasts. Tony currently runs the webcasts on Microsoft Teams; BCTV is currently responsible for recording “in-person” and webcast meetings. Having BCTV run the webcasts potentially allows Zoom to be used as the meeting platform rather than Teams. The contract for this new option is currently being worked out.

**Panel Website Update:** The Panel generally agreed that refreshing the Panel website would be helpful for improving outreach. It was suggested that recent updates to the Vermont Climate Control Council website could serve as a template for revamping the Panel’s website. It was noted that the Panel website must remain the responsibility of the Public Service Department. However, its web design can be contracted out. Website updates would need to be reviewed by the Department to assure that they comply with State website requirements. It was again suggested that the Panel form a committee to oversee the website revisions.

**Enhancements to Public Outreach:** While it was agreed that additional public outreach is needed, no consensus was reached on potential improvements. A committee to look at potential new outreach options was suggested, but no action to create such a committee was taken. The Panel will pursue potential Public Outreach options in 2022.
• **Discussion of Federal Nuclear Waste Policy Committee Activities:**
  Lissa Weinmann, Chair of the Panel’s Federal Nuclear Waste Policy Committee, discussed recent Committee activities. The Committee continues to meet monthly, with the last meeting of the year scheduled for December 20. The Committee’s meetings are drawing attention. Several members of the public from across the United States have attended Committee’s webcasts. One official from the US Department of Energy joins meetings on a regular basis. The Committee is currently working on a draft Advisory Opinion regarding the US Department of Energy’s development of a Consent-Based Siting process. Recently (last week) the Department of Energy issued a Request for Information (public comments) on its Consent-Based Siting process; the Committee will examine whether anything in this request should be addressed by the Advisory Opinion. The Committee plans to continue meeting in 2022 to discuss Federal Nuclear Waste Policy topics. However, it may opt to meet less frequently (probably quarterly, rather than monthly).

• **NorthStar Update on Recent VY Site Decommissioning Activities:** NorthStar Panelist Corey Daniels summarized decommissioning activities completed since September 2021. (Slides for this presentation are available from the Panel’s website.) It was noted that the VY site recently exceeded 1,100,000 person-hours worked (since NorthStar took ownership of VY on January 11, 2019) without an OSHA Recordable Lost Time Accident. The Nuclear Regulatory Commission (NRC) has issued no cited violations, nor have there been any non-cited violations, for the decommissioning project thus far in 2021. There were no cited or non-cited violations in 2019 and 2020. Progress on Reactor Vessel (RV) segmentation and the ongoing dismantling of the Turbine Building was described. The RV is now empty; all RV internal components have been removed. In preparation for segmenting the RV itself, some drain down of water in the Reactor Cavity and the Dry Separator Pit (DSP) has occurred. Efforts for the remainder of the year will focus on filtering expended garnet cutting media from the RV and DSP water. Although RV segmentation remains somewhat behind schedule, the decommissioning project overall remains ahead of schedule. The largest Turbine Building structure, the Main Condenser, is essentially gone. Approximately 2.5 million pounds of Condenser scrap has been removed thus far. Demolition of the Administration Building (adjacent to the north side of the Turbine Building) is complete. Progress on the demolition of the Radioactive Waste Clean-Up Building and the Cooling Tower basins / foundations was also described.

• **Department of Environmental Conservation Update:**
  Gerold Noyes, Environmental Engineer in the Department of Environmental Conservation’s (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. ANR / DEC staff visited the VY site on December 1, which allowed DEC’s Grahame Bradley to observe site activities first-hand. (Mr. Noyes will be retiring from state government in February 2022 and Mr. Bradley will be taking over Mr. Noyes')
Quarterly groundwater sampling for non-radiological contaminants continue to show no area-wide contamination issues at the VY site. The next sampling is scheduled for December 14. No new contamination areas have been found onsite; however, as more site structures are demolished, this will allow more areas to be sampled. The first soil sampling for a demolished structure will occur on December 12 from under the concrete floor of Cooling Tower #1. No additional asbestos abatement work has occurred; onsite asbestos abatement is largely complete, although asbestos checks are still occurring.

- **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. (Slides for this presentation are available from the Panel’s website.) The expenditures thus far on the project are consistent with the project’s observed progress. NorthStar remains on track to complete the project with available funding. It was noted that in Vermont Yankee indirect license transfer case before the Vermont Public Utility Commission (PUC), the Petitioner (NorthStar ownership) has asked to withdraw the case. In response to the withdrawal request, PSD has asked for several additional reporting requirements in NorthStar’s self-reporting. NorthStar and PSD are awaiting PUC decisions for these requests.

- **Draft Annual Report for 2021:**
  State Nuclear Engineer Tony Leshinskie summarized the current status of the Panel’s 2021 Annual Report to the Legislature, which is due on January 15, 2022. Expected contents for the report were described. A draft of this report will be available by December 21 for Panelist review and comments. After some discussion, the Panel agreed to hold a Special Meeting on January 10, 2022, to discuss and approve the final draft of the report.

- **Election of New Panel Officers:** In separate votes, Emily Davis was reelected Panel Chair and Josh Unruh was reelected Panel Vice-Chair for terms of 1 year. The Panel thanked Emily Davis for her service as Panel Chair in 2021. Emily Davis thanked Josh Unruh for his assistance in addressing her “numerous questions” regarding the Panel Chair position.

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

- **1/4** Site Decommissioning Activities resume following Holiday Break
- **1/4** Preparations for Reactor Vessel (RV) Core Shroud segmentation resume; Turbine Building (TB) piping and equipment removals resume; Radwaste Clean-Up (RWCU) Building Piping and component removal underway; Radioactive waste shipments via railcars resume
- **1/11** Removal of Condensate Storage Tank (CST) ancillary structures begins; clearing of TB Feedwater Heater Bay equipment underway
- **1/19** Panel Chair & Vice-Chair tour VY site to observe current decommissioning activities
• 1/25 Clearing of TB Condensate Pump Room components begins; preparations for TB
Condenser dismantling begin

• 1/26 RV Core Shroud segmentation begins

• 1/29 Phase 1 of RWCU Building Piping and component removal completed; clearing of TB
Feedwater Heater Bay equipment completed

• 2/1 RV Drywell insulation and ductwork removal begins

• 2/22 Dismantling of TB Condenser ancillary structures (water boxes) begins

• 2/23 First Nuclear Regulatory Commission (NRC) onsite inspection of the year occurs
  this week (2/23 through 2/25)

• 3/5 Packaging & shipment of final Control Rod Guide Tube completed (activity began in
  October 2020); clearing of TB Condensate Pump Room components completed

• 3/8 TB Condenser segmentation begins

• 3/19 RV Drywell insulation and ductwork removal completed

• 3/22 Modified RB Ventilation System fully operational; VY Effluent Stack abandoned

• 3/29 Northstar files required Annual VY Decommissioning Trust Fund and Spent
  Fuel Management Fund reports

• 4/1 VY “Tabletop” Site Emergency Drills Completed

• 4/1 DEC issues revised VY river discharge permit; diversion well water from VY can
  now be discharged to the Connecticut River

• 4/1 First shipment of VY “Process” Water occurs

• 4/5 Cutting of TB Condenser Tubes (largest portion of the Condenser) underway

• 4/5 Lead paint abatement at River Water Intake Structure begins

• 4/12 Dismantling of Effluent Stack internal components begins

• 4/14 Federal Railroad Administration inspections at VY to review hazmat rail shipment
  procedures

• 4/15 Lead paint abatement at River Water Intake Structure completed

• 4/16 Clearing of abandoned RB Ventilation System components completed

• 4/19 Second NRC onsite inspection of the year occurs this week (4/19 through 4/22)

• 4/29 650,000 working hours without an OSHA lost time incident at VY celebrated

• 5/7 NRC approves VY disposal of up to 2,000,000 gallons of radioactive water at
  US Ecology Idaho hazmat disposal facilities

• 5/10 CST decontamination and removal of internal components begins

• 5/15 Dismantling of - internal components completed

• 5/19 Demolition of Effluent Stack begins

• 5/20 First shipment of expended cutting media (sand-garnet) collected from RV water
  sent to WCS

• 6/2 Quarterly groundwater sampling completed

• 6/2 First Groundwater Diversion Well discharge to the Connecticut River occurs

• 6/11 CST decontamination and removal of internal components completed

• 6/14 Demolition of TB Administrative Offices section begins

• 6/16 RV Core Shroud segmentation completed
Removal of RV Jet Pumps begins 6/21
Third NRC onsite inspection of the year occurs this week (6/21 through 6/24) 6/21
Onsite Rail Spur Maintenance completed (one day job) 6/23
Annual self-inspections spent fuel casks and ISFSI pads completed; no significant issues identified 6/24
CST demolition begins 6/28
CST demolition completed 6/30
Cutting of TB Condenser Tubes (largest portion of the Condenser) completed 7/8
Effluent Stack demolition completed 7/13
Clearing of Effluent Stack debris completed 7/15
NRC Early 2020 Inspection Exit Meeting – no issues, findings, or violations 7/19
Vacuuming garnet cutting media from RV water begins 7/19
NRC Region 1 Administrator tours VY site 7/20
Annual site roadway assessment completed (required by Town of Vernon) 7/21
River Intake Structure Chemical Shed demolition begins 7/26
Fourth NRC onsite inspection of the year occurs this week (8/10 through 8/12) 8/10
River Intake Structure Chemical Shed demolition competed 8/11
Removal of RV Jet Pumps completed 8/12
River Intake Structure Chemical Shed demolition competed 8/12
Potable Water System modified; Reactor and Turbine Buildings disconnected from Potable Water System 8/25
Radwaste Processing Building demolition begins 10/10
Radwaste Processing Building demolition completed 10/20
Preparations for Radwaste Processing Building demolition begin 10/25
Demolition of TB Administrative Offices completed* 10/28
Demolition of Meteorological Towers completed 11/2
Draining of RV Cavity & Dryer / Separator Pit (DSP) begins 11/8
Condenser Outer Shell segmentation completed 11/12
East Cooling Tower foundation demolition begins 11/15
Radwaste Processing Building demolition begins 11/22
West Cooling Tower foundation demolition begins 11/29
East Cooling Tower foundation demolition completed 12/3
Control Blade Crushing begins 12/6
NRC postpones planned onsite inspection to January 2022 12/7
• 12/14 Quarterly groundwater sampling completed
• 12/17 Radwaste Processing Building demolition completed*
• 12/21 Control Blade Crushing completed

* Below grade portions of these structures will be demolished at a future date

V. Nuclear Decommissioning Trust (NDT) and Site Restoration Trust (SRT) Fund Updates
(based on latest available data for 2021).

<table>
<thead>
<tr>
<th>NDT</th>
<th>SRT</th>
</tr>
</thead>
<tbody>
<tr>
<td>$361.1 M Balance on December 31, 2020</td>
<td>$62.4 M Balance on December 31, 2020</td>
</tr>
<tr>
<td>$342.5 M Balance on March 31, 2021</td>
<td>$60.5 M Balance on March 31, 2021</td>
</tr>
<tr>
<td>$322.8 M Balance on June 30, 2021</td>
<td>$59.8 M Balance on June 30, 2021</td>
</tr>
<tr>
<td>$307.8 M Balance on August 31, 2020</td>
<td>$58.9 M Balance on August 31, 2020</td>
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<tr>
<td>$298.7 M Balance on September 30, 2021</td>
<td>$57.6 M Balance on September 30, 2021</td>
</tr>
<tr>
<td>$276.3 M Balance on December 31, 2021</td>
<td>$56.9 M Balance on December 31, 2021</td>
</tr>
</tbody>
</table>

Monthly balances for the NDT and SRT are available at:
https://publicservice.vermont.gov/content/trust-balances.

Summaries of monthly expenditures for the Vermont Yankee Decommissioning Project are available:
https://publicservice.vermont.gov/content/public-reports.

VI. Spent Nuclear Fuel Status at Vermont Yankee

Transfer of VY’s entire spent fuel inventory to dry cask storage was completed on August 1, 2018. No changes to VY’s spent fuel storage have occurred since then. A total of 58 dry casks, holding a total of 3,880 spent fuel assemblies, are stored at the VY Independent Spent Fuel Storage Installation (ISFSI). VY’s spent fuel will remain stored at the VY ISFSI until such time that the US Department of Energy fulfills its obligation to provide a national spent nuclear fuel repository.

A total of 7 vacant cask spaces remain on the 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 three spaces are designated for storing Greater than Class C (GTCC) Low Level Nuclear Waste (e.g., highly contaminated VY Reactor Vessel internal components) resulting from VY’s active decommissioning. VY continues to anticipate that the GTCC Nuclear Waste from VY’s decommissioning can be stored in one GTCC waste container. A GTCC waste container will be loaded and moved to the VY ISFSI at a future date. No US low level radioactive waste disposal facilities are currently licensed to accept GTCC waste. As a result of Reactor Vessel segmentation conducted at VY during 2021, VY’s GTCC waste currently resides in the Spent Fuel Pool. Transfer of VY’s GTCC to the ISFSI is expected to occur in mid-2022.
VII. Significant Vermont Yankee Site Changes

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 2021. All Vermont Yankee site changes that occurred during 2021 were the result of continuing decommissioning activities which commenced on January 11, 2019.

The following onsite structures were demolished during 2021:

- Abandoned 500,000 gallon Condensate Storage Tank (CST)
- River Intake Structure Chemical Shed
- Radioactive Waste Clean-Up Building
- Effluent Stack
- Administrative Offices Building (a section of the Turbine Building)
- Cooling Tower foundations and water basins
- Several abandoned security structures (none of which impact the VY ISFSI)

Additionally, all Reactor Vessel internal components have been removed. Segmentation and removal of the Reactor Vessel itself is expected in 2022. A significant portion of Turbine Building components, including the Main Steam Condenser, have been demolished.

The concrete pads for the previously demolished Shipping and Receiving Warehouse and the Advanced Off-Gas (AOG) Building remain in place. The below grade structures for the AOG Building and the Transformer pad also remain in place.

No significant onsite road repairs were required this year. The onsite rail spur has undergone maintenance as needed.

Several modifications to the onsite potable water supply system were made to permit demolition of the Administrative Offices Building.

VIII. Vermont Yankee Water Management Program

- Because 2021 has had significantly more rain than several previous years, the rate of groundwater entering the Turbine Building has been higher than rates seen in 2018 through 2020.
  - Increased rainfall produced a rate range between 300 and 1500 gallons per day
  - At End of Year the rate was roughly 300 gallons per day (similar to 2019 and 2020 end of year rates).
  - In leakage is still below rates initially seen in 2015
- Roughly $450,835$ gallons of in leakage water have shipped in 2021
All in leakage water has shipped to Waste Control Specialists (WCS) NRC-licensed disposal site in Andrews County, Texas during 2021.

No water has shipped to US Ecology’s hazardous waste disposal facility in Grandview, Idaho, even though Vermont Yankee received NRC approval to ship up to 2,000,000 gallons of contaminated water to this facility (authorization received May 7, 2021); Vermont Yankee was previously authorized to ship 200,000 gallons of contaminated water to this facility. Shipments under this prior authorization occurred in 2019 and 2020.

All 2021 water shipments made were via tanker rail cars; 20 rail shipments in total.

Groundwater shipments to WCS facilities continue “as-needed.”

A summary of radiological and hazardous waste shipments made from the Vermont Yankee site during 2021 follows.

IX. Decommissioning Waste Shipments Summary

IX.A Radioactive Waste Shipments Summary

An annual summary of Vermont Yankee’s radioactive waste shipments is published in mid-May of the following calendar year as part of the “Radioactive Effluent Release Report” filed with the US Nuclear Regulatory Commission and the Vermont Public Service Department. Preliminary radioactive waste volume data available as of December 31, 2021 indicates that approximately 379,944 cubic feet of radioactive waste was shipped from the Vermont Yankee site during 2021 (similar to the 309,152 cubic feet of radioactive waste shipped in 2020). The total weight of the waste shipped in 2021 exceeds 19,500,000 pounds (>9,750 tons). The total radiological activity of the shipped waste is 27,460 Curies (up from 522.8 Curies shipped in 2020 and 126.8 Curies shipped in 2019). All 2021 calendar year radioactive waste shipments were sent to Waste Control Specialists’ (WCS) disposal facility Andrews County, Texas. 171 radioactive waste shipments were made in 2021; 142 of these were made via railcar. The remaining 29 shipments were made by truck.

Based on data provided in response to Panel questions in April 2021, the total activity of radioactive waste stored at the VT Yankee site is estimated as follows:
761 • 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)
766 • The Greater Than Class C radioactive waste cask to be stored at the VY ISFSI will contain approximately 175,000 Curies once loaded.

IX.B Hazardous Waste Shipments Summary
770 • 6 tons of construction and demolition debris was shipped to the following facilities:
771   o Resource Waste Services, Salem, NH
773 • 74 cubic yards of asbestos was shipped to the following facilities:
774   o Minerva Landfill, Waynesburg, OH
776   o WMNH Tree, Rochester, NH
778 • 609,360 pounds of ferrous and non-ferrous scrap metal was shipped to the following facility for recycling:
779   o Mattuchio Scrap Metal, Everett, MA

X. Vermont Congressional Delegation
781 Representatives of Vermont’s Congressional Delegation attended the August 23 NDCAP Federal Nuclear Waste Policy Committee meeting and discussed nuclear waste policy bills currently before Congress. Haley Pero from Senator Bernie Sanders’ Office and Thea Wurzburg from Congressman Peter Welch’s Office outlined the Nuclear Plant Decommissioning Act of 2020, a bill that Senator Sanders and Congressman Welch sponsored. If enacted, the bill would give states and local governments a meaningful role in the development of reactor decommissioning plans, as well as any post-shutdown reactor license transfer efforts. The bill would require consultation with host state governments and neighboring local governments for a decommissioning nuclear power plant. The Nuclear Regulatory Commission would be required to document its evaluation and dispositioning of comments received via this consultation process. Details of this bill are available at: https://publicservice.vermont.gov/sites/dps/files/documents/NDA_of_2020_OnePage_Summary.pdf.
793 While the bill was introduced, but not passed, in the 2020 Congressional Session, Senator Sanders and Congressman Welch expect to reintroduce the bill in the current Congressional Session. Both offices seek feedback regarding any changes to the 2020 bill language that should be introduced. Ms. Pero and Ms. Wurzburg also took questions from the Committee and members of the public attending the meeting regarding other potential Congressional actions. It is expected that several decommissioning and spent fuel disposition-related bills that were introduced in the past several sessions will likely be reintroduced. Differences between the
Trump and Biden Administration’s approaches to nuclear decommissioning and spent fuel policies were highlighted. The Trump Administration focused on restarting Yucca Mountain as the nation’s permanent spent fuel repository. However, no significant funding was appropriated for this effort. The Biden Administration has indicated that it will not pursue Yucca Mountain as a repository. The US Department of Energy has been directed, under existing authority, to pursue one or more locations for an interim spent fuel storage facility. (Note that these are not the storage facility efforts currently being pursued by Waste Control Specialists and Holtec International at locations in Texas and New Mexico, respectively.) It was noted though that additional Biden Administration policies in these areas are currently unknown.

Ms. Pero and Ms. Wurzburg agreed to follow-up with the Committee to track additional decommissioning and spent fuel policy bills as they are introduced or reintroduced in the current Congressional Session. They also agreed to provide further information to the Committee about the Spent Nuclear Fuels Solutions Caucus recently formed by US Rep. Mike Levin of California (whose district includes the currently decommissioning San Onofre Nuclear Generating Station). Details on this caucus are available at: https://www.sandiegouniontribune.com/news/politics/story/2021-07-22/nuclear-regulatory-caucus.

Additional information on the August 23 NDCAP Federal Nuclear Waste Policy Committee meeting is available in the Committee’s Summary Report available at: https://publicservice.vermont.gov/sites/dps/files/documents/Final_Nuclear_Waste_Committee_Update_2021_NDCAP_Rev2.pdf.

In one significant follow-up to the August 23 discussion, Ms. Pero alerted NDCAP to the US Department of Energy’s (DOE’s) restart of a Consent-Based Siting process for locating a national consolidated interim spent fuel storage facility. Restart of this process began on November 30. Details regarding DOE’s Consent-Based Siting efforts are available at: https://www.energy.gov/ne/consent-based-siting.

XI. Current NDCAP Committees

XI.A NDCAP Issues Committee

The Issues Committee, formed in 2015 and reconstituted in 2019, is intended to provide recommendations for topics to be discussed at meetings of the Full Panel. The Issues Committee did not meet during 2021. For 2021, the Issues Committee’s function (selection of meeting topics) was performed by the Full Panel at its regular meetings, with additional interactions between the Panel Chair and the State Nuclear Engineer as needed.
XI.B NDCAP Federal Nuclear Waste Policy Committee

NDCAP created the Federal Nuclear Waste Policy Committee in December 2020 as a means for the Panel to learn more about US national spent nuclear fuel storage and disposal issues. The Committee is developing recommendations on US nuclear waste policies for the Full Panel to consider as potential Advisory Opinions on these subjects. The Committee consists of the following Panel members: Lissa Weinmann (Committee Chair), Corey Daniels, Maddy Arms, Marvin Resnikoff and Emily Davis (NDCAP Chair). Other Panel members, including Bill Irwin, Sara Coffey and Bob Leach, have attended several of the Committee’s meetings held in 2021. The Committee is administered by State Nuclear Engineer Tony Leshinskie.

The Committee met monthly throughout 2021, typically on the third Monday of the month. In learning about current US national spent nuclear fuel storage and disposal policies, the Committee has compiled a reading list of relevant materials. This list is available at the Committee’s webpage at:

https://publicservice.vermont.gov/content/vt-ndcap-federal-nuclear-waste-policy

A summary of the topics considered and the current status of Committee recommendations for the Full Panel to consider are available at:

https://publicservice.vermont.gov/content/federal-nuclear-waste-policy-committee-rev-2-draft-report

The Committee has begun assessing the US Department of Energy’s recently published Request for Information (RFI) regarding the restart for developing a Consent Based Siting process for identifying potential locations for a national spent nuclear fuel repository. The Department of Energy’s RFI is available at:


Further information on the US Department of Energy’s effort to develop a Consent Based Siting process is available at:

https://www.energy.gov/ne/consent-based-siting

The Committee expects to have at least one Advisory Opinion and comments on the US Department of Energy Consent-Based Siting RFI available in early 2022.
XII. Meeting Schedule and Priorities for 2022

During the Panel’s December 6 meeting, the Panel reached consensus on the following meeting dates for 2022:

- January 10: Special Meeting for approval of the 2021 Annual Report
- February 28: Tentative meeting for discussing potential filings in response to the US Department of Energy’s Consent-Based Siting Request for Information
- May 9: Regular meeting discussing and assessing the Decommissioning Project Annual Status Reports (required by PUC Case 8880)
- September 19: Regular meeting (agenda items to be determined)
- December 12: Regular meeting (agenda items to be determined)

The Panel’s initial focus for 2022 will be assessing any Advisory Opinions submitted for consideration by the Federal Nuclear Waste Policy Committee. Any proposed Advisory Opinions will likely focus on the US Department of Energy’s renewed efforts in developing a Consent-Based Siting Process for national spent nuclear fuel repositories. The tentative February 28 meeting date was selected with the US Department of Energy’s March 4, 2022 deadline for comments in mind.

The Panel will also focus on improving its public outreach. As noted in the September 20 and December 6 meeting summaries (see Section III), the Panel intends to use parts of its new $35,000 annual budget to revamp its website, improve its webcast / hybrid meeting capabilities, and identify additional options for public outreach.

XIII. Panel Composition and Duties Change Recommendations

As part of the Panel Duties outlined in Part II of the Panel Charter (see Section II of this Report), the Panel “shall assess further changes to the Panel’s membership or duties as appropriate.” With the recent changes in Panel composition and duties approved by the 2021 Legislature in Act 54, the Panel currently has no additional change recommendations for its composition or duties.