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**Written submission from
Gordon W. Dalzell**

**Mémoire de
Gordon W. Dalzell**

**Regulatory Oversight Report for
Canadian Nuclear Power Generating
Sites in Canada: 2021**

**Rapport de surveillance
réglementaire des sites de centrales
nucléaires au Canada : 2021**

Commission Meeting

Réunion de la Commission

November 3, 2022

Le 3 novembre 2022

Gordon W. Dalzell

September 14, 2022

Canadian Nuclear Safety Commission
P.O. 1046, Station B
280 Slater Street
Ottawa, Ontario, K1P 5S9
Canada

To Whom It May Concern:

**SUBJECT: Regulatory Oversight Report for Canadian Nuclear Power
Generating Sites: 2021**

This letter is to provide my comments and recommendations on the review of the Regulatory Oversight Report Canadian Nuclear Power Generating Sites 2021.

Please keep in mind that these comments and reactions to the many topic areas are prepared from a community member's perspective and in this case an interested party involved in the environmental movement.

The points raised in my submission of a critical nature, are raised to assist the regulator to continue its oversight vigilance and transparency. This ROR does raise questions where answers are not always complete for the public to understand. I continue to have the outmost confidence in the oversight work of the Canadian Nuclear Safety Commission members and staff. Even with all the issues raised in my submission, it does not preclude my fundamental conclusion that all these nuclear power plants in Canada are operated safely and the public is not put at risk from them.

I trust that the points raised in my submission will be discussed with both CNSC staff and Commission Board members. I would also appreciate a written response to the points raised in my submission.

The nuclear technology is a very complex science, and as a community member do stand to be corrected if my interpretation of the information highlighted in submission needs clarification to assist the public in this review.

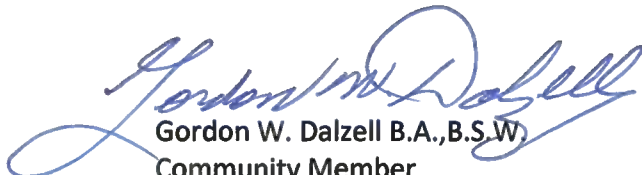
Background information of commentator:

This writer has been following the local nuclear industry over the years specifically the Point Lepreau Nuclear Generating Station (PLNGS). My past involvement has included formal intervenor status at the licensing renewal for this facility (PLNGS).

Additionally, I have participated in the public review of Oversight Report of Nuclear Facilities in Canada by making a written submission to the general meeting of the CNSC for several years. As well, this writer is co-founder of the Saint John Citizens Coalition for Clean Air an environmental public interest group advocating for clean air in our local and regional area of Saint John, NB.

I appreciate the opportunity to participate, and I thank you for taking my comments under review.

Respectfully submitted,



Gordon W. Dalzell B.A., B.S.W.
Community Member
Saint John, New Brunswick

Canadian Nuclear Safety Commission

Regulatory Oversight Report for Canadian Nuclear Power Generating Sites for 2021

September 14, 2021

**Submitted by: Gordon W. Dalzell
Community Member
Saint John, New
Brunswick**

Overview

This intervenor again welcomes the opportunity to participate with these comments as part of the CNSC Commission Meeting scheduled for November 2 & 3, 2022.

First, this intervenor has carefully reviewed the Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2021 by identifying issues of concern.

Secondly, as part of this public commentary process, this writer will document my findings with recommendations throughout this submission.

Background information of this submitter for this submission. This writer is making this submission as a community member and interested party, having followed the nuclear industry and its regulatory oversight over many years. Over these years, this writer has followed this CNSC regulatory activities for the nuclear power generating sites with a special interest in the Point Lepreau Nuclear Generating Station (PLNGS).

More recently, over the last several years, this writer has taken a more current interest in the research and development of the Small Modular Reactors here in New Brunswick.

My involvement has included participating in past CNSC public meetings and hearings as a former intervenor on the last two licensing renewals for the PLNGS as well as in the EIA for PLNGS Solid Radioactive Waste Management Facility (SRWMF) expansion in 2005.

Additionally, over the last four years, I have provided written submissions on the annual regulatory oversight report.

The purpose of these interventions is to ensure that the safety parameters covered in the ROR have been adequately addressed. In addition, this writer values public participation and sees the need to participate within this public review processes as evidenced by this and several other public review process. The PLNGS Licensing Renewal Application Public Hearing in Saint John was an extraordinary public hearing process with over 200 submissions including many formal presentations.

It was suggested that the ROR renewal process could serve as means to provide adequate annual updates. Several intervenors including this writer, identified that the current ROR Public Review process could never substitute for the kind of public review that characterize the licensing renewal public hearing process such as this writer participated in during the PLNGS Licence Renewal in Saint John, NB, in May 2022.

Considering this writer resides in the regional area of one of these nuclear generating sites (PLNGS), this writer and so many other residents could be potentially impacted from a nuclear safety incident resulting in an unplanned radiological emission event into the environment. As well this writer had many family members living in the region of another nuclear generating facility in the greater Toronto area.

As a citizen of Canada, this writer is of the view that it is important to review and comment of the public review opportunities afforded to the public.

This submission will not be as comprehensive as past submissions due to circumstances; however, it will highlight areas of concern covered in the 2021 Regulatory Oversight Report. In preparing these comments, this writer will follow the layout of the 2021 Regulatory Oversight Report.

The key reassuring message noted in the ROR summary is exactly what the public expect to read.

“Through compliances verification activities, CNSC staff concluded that nuclear power plants (NPPs) and the waste management facilities (WMFs) on their sites in Canada operated safely during 2021.”

The ROR states these observations to support its above quote conclusions:

1. Radiation doses to members of the public were well below the regulatory limit.
2. Radiation doses to workers were well below the regulatory limit.
3. Radiological releases to the environment from Nuclear Power plants (NPPs) and Waste Management Facilities (WMFs) were well below regulatory limits.

Having cited these points, this writer has identified issues of concern. Having acknowledged these summary points above from the Executive Summary, that does not preclude the fact that there still are issues of concern that have some safety implications that this writer has identified in this submission.

The following commentary will follow the format of the Regulatory Oversight Report for the Canadian Nuclear Power Generating Sties for 2021.

1 INTRODUCTION

1.2 Scope of the Regulatory Oversight Report

In respect to “UPDATE” - These updates identify topics where more recent information (up to June 2022) is included. Some examples noted as progress on corrective actions, descriptions of significant events and updates that the Commission specifically requested. These kinds of updates would of course be expected and meet community expectations. These updates need to be enhanced where updated information not in the written reports need to be verbally presented at the Commission meeting November 2-3, 2022. Important updates could be presented to the Commission at their public meeting where we the public can be updated on items that were not included in the 2021 ROR. We should not have to wait for 2022.

ROR to be updated on important safety regulatory information. This writer would like to see CNSC staff report submit these latest updates submitted to the Commission members for their interest at the November 2022 Commission Meeting.

1.3 Nuclear Facilities Covered by this Regulatory Oversight Report

If Canada had not built as many nuclear power plants site listed in Figure 1, Page 4 our GHG emissions levels would have been much higher as we would have had to depend more clearly on carbon based fuels to produce much needed electricity. Between hydro-electric and nuclear, we have prevented thousands of deaths and air quality problems that a heavier reliance of carbon based fuels would have resulted. Unfortunately, the coal fire plants in US, Midwest, carbon emissions from vehicles from US Northeast all contributed to transboundary air pollution that have degraded our airsheds within Quebec/Windsor corridor including the Maritimes Provinces over the 1980s, 90' 2000's in particular.

1.4.2 Licensing

This writer and intervenors at the PLNGS were pleased to see that the 10-year licensing period was issued contrary to NB Power's recommendation for a 25-year licence period. Plans refer to my submission form Part II Hearing for PLNGS Licence Renewal.

1.4.5 Safety Assessment Ratings

Reporting - it is noted that REGDOC 3.1.1 requires licensee to submit quarterly and annual reports on various subjects - for example, quarterly reports on the safety performance indicator that are discussed in this report.

This writer with a keen interest on PLNGS lives in the City of Saint John, 50 km from one of these nuclear power plants (PLNGS) like to recommend that any quarterly reports that did not make it into the 2021 ROR and its updates be formally filed/presented to the Commission members as part of the agenda for the upcoming commission meeting on November 2-3, 2022. There could be important information in such report of public interest. We should not have to wait for these quarterly reports until next year's ROR.

2. GENERAL AND SUPPORTING INFORMATION

2.2 Human Performance

Overall comment here is that human performance program and actual human performance itself at these nuclear power generating sites is critically important. Over the last few years with pandemic conditions where the entire society and its members have been under high stress, this area of human performance has taken on a renewed urgency from a regulatory and on the job performance perspective.

This writer welcomes the draft of REGDOC 2.21 Human Performance now open for public comment until the November 21, 2022 deadline. This writer plan to provide such public comments.

Table 3- Number of available certifications for NPP and certified positions for 2021

This is another area of interest of this writer, particularly for the Point Lepreau NGS. This area of concern was identified in this writer licensing renewal submission (see below)

3.3 Personnel Certification

This writer has reason to believe that the failure rate for certification has been higher than expected. Whether there is at the power operator program at the NB Community College level or at the PLNGS

certification course level creates the same problem that needs clarification. My understanding is that those writing their tests or exams for certification levels have not been as successful as expected.

Question is why? This writer would appreciate an explanation. During Part 1 in both CNSC and PLNGS presentations - it refers to certified level training for the operations group and success rate for those candidates. What is the current success rate and what steps are being taken to address any issues related to the success or failure of certified employees? It is my Understanding that there were improvements made to the training qualification and testing.

In respect to have sufficient certified staff successfully complete their training, I cannot think of any area more important as this one. It is recommended that this whole area be fully reviewed as part of this licencing renewal. Associated with this is the low number of available certified control room operators.

There does not appear to be all that many compared to other nuclear power plants as referenced in one of the tables of the 2020 ROR.

The response from the Senior NB Power officials at the Part 1 Hearing needs to be included in this Part 2 hearing along with a recommendation for the Commission pursuing this whole certification area with the applicant and CNSC staff for the public record.

It appears that there have been some improvements in the actual to minimum requirements for these critically important certified positions.

NB Power submitted updates to their program to address the CNSC identified gaps. A review by the CNSC staff is in progress. This writer is requesting these updates be presented to the Commission by CNSC staff at the November 2022 ROR Commission Meeting. The meeting will be available to the public and such updates will be of public interest. Further an update on the Federal Court granting an injunction putting a hold on the implementation of the pre-placement and random alcohol and drug testing pending the results of the Federal Court's Judicial review scheduled for late 2022.

If there is a ruling by November 2022, Commission members need to address the public of such a decision. If the decision is after the date, CNSC needs to issue a public notice or media release to advise the public considering how important such testing is for those operating a nuclear power plant

2.4 Safety Analysis

Another area of concern to this writer is the aging and aging management of these nuclear reactors especially those reactors that have not been refurbished as yet.

One is in the 2021 ROR on this topic of Safety Analysis (2.4) is related to information on page 20. The industry has developed a composite analytical approach to addressing the large break LOCA - safety margin issues. (CSI AA9, PF9 and PF10). This industry identified realistic analysis approach is in lieu of the traditional conservative approach in estimation of the consequences for the BDBA-LBLOCA position. It is noted that "this scope of the realistic analysis is currently under discussion between CNSC staff and the industry. In other records, this writer concludes the "jury is still out" on what the ROR refers to the novel analytical approach. See last paragraph on page 20.

When it comes to industry initiated nuclear safety analysis is covered in 2.4 Safety Analysis page 20, this writer urges caution to the regulator. The traditional conservative approach has worked well over the last 40 years, hasn't it? There is no comment indicating this traditional conservative approach has not been effective. If such exists, it should have been included in this section on page 20. CNSC staff need to provide any problems or limitations of such in the staff report to the November

Commission meeting. Finally, actions need to follow before implementing this “novel analytical approach (CNSC words).

Has such an approach been used before in other CANDU reactors? What were the results?

Page 21 - under Section 2.4 Reference to licensee of operating NPPs have mature fuel design and inspection programs, however, over the past several years, operating NPPs have experience challenges related to fuel performance such as fuel defects or fuel bundles vibration. This part of safety analysis 2.4 does not identify what these challenges are or a more detailed risk analysis. Other than, CNSC staff will continue to monitor the status of mitigating strategies and were satisfied with the industry’s management of those issues in 2021. A little too vague for this writer’s need who would like to inform on this issue.

Page 23 - Pressure tubes and fuel channels overall performance

Considering aging of these nuclear power plants, that have not all been refurbished or decommissioned; this whole area of detecting problems, thinning of pressure tubes is of high public interest. If Heq testing indicator is not the correct one to detect problems which test or indication are reliable based on evidence based science foundation analysis.

How do you accurately detect pressure tube thinning? This writer is please to see an detailed update on these Heq findings and subsequent industry actions will be subject of a separate focused Commission proceedings in 2022. The results of this hearing need to be included in the minutes of the November 1-2 Commission Hearing.

Reassuring to read on page 24 that Licensees are not permitted to operate tubes that do not satisfy safety margins. It is clear to this writer that there is potential for serious problems of this thinning of pressure tubes are not accurately identified and action taken. On this subject on top of page 25, this writer was alarmed with the following statement:

“In 2021, CNSC staff actively monitored the industry’s progress in research activities to ensure that licensees have sufficient understanding of degradation issues to safely operate pressure tubes especially those planned for extended operations.” Why

wasn't such research developed years ago? It is kind of late in the game for research activities to ensure that there is sufficient understanding of degradation issues. Truthfully, this is a very surprising revelation considering the importance of the safety implications. One cannot help asking the question why didn't the industry and regulator undertake earlier to ensure that licensees had a sufficient understanding of degradation issues to safely operate these pressure tube especially those planned for extended operation beyond their best before date. All this research and analysis should have been established before these extended operations were authorized. If there is a serious nuclear incident related to pressure tube failure, these are the kind of questions a public inquiry will be pursuing with both the regulatory and the industry. In reviewing my notes, this writer wrote beside this section on page 25 - "like playing Russian roulette". It feels like the industry is taking some risks associated with operating some of these older aging pre-refurbishment units.

2.7 Radiation Protection

Very alarming to read the following on page 26. In 2021 "the collective dose for monitored individuals at all Canadian NPPs and WMs was 35.5 person sieverts- approximately 30.5 percent higher than the industry wide collective dose reported for the previous year (27.2 mSv). The increase in total collective dose was mainly due to increased outage, activities at Bruce Power and Darlington". No matter what the reason such an increase is - that is totally unacceptable. Again, on a personal basis, the annual average effective dose in 2021 for all Canadian NPPs was an increase of 15.5 percent from 2020 values. One does not want to learn that there has been an increase.

This is not what community members and especially those exposed to such radiation exposures want to read. How does this happen? There should be an explanation as to why such increases occur. More importantly what steps are in place to prevent these kinds of increases. Will this be a reoccurring pattern? For those subject to this radiation increases - mainly due to the outage activities - the question here is are those outages all related to refurbishment activities? There needed to be a clarification as to what are these outage activities. Even though, the CNSC annual dose limit is 50 mSv, one does not want to see percentage increase noted on page 27. Many of those exposed could very well be going through the refurbishment work. Again, lack of

clarity causes the public to have to guess who is reaching those increases and what are the specific reasons. None of those questions are answered on page 27-30.

2.8 Conventional Health and Safety

The stats in this section does not cover “near misses” where an accident under those parameters did not occur get registered but come close to a reportable accident. Those near misses are recorded and considered important by Health and Safety Committees at work locations of these nuclear power plants such as PLNGS.

When this writer worked for a Government of Canada Dept. (VAC), I served an on the office Health and Safety Committee. These “near misses” were often reported to the committee, were discussed as a learning tool to prevent a reportable accident from occurring. This kind of near miss information should be reported to CNSC and provincial health and safety regulatory body. See further comments on this recommendation at end of this submission.

2.9 Environmental Protection

This writer objects to change in reporting practice where CNSC publishes annual radionuclide loadings to the environment from nuclear facilities on the CNSC open Government Portal instead on this information replicated in an appendix as part of the Regulatory Oversight Report. Both formats need to be used not the one that excludes an appendix as part of the annual ROR.

The good news on this subject at bottom of page 34 states.

“The table shows that the dose was well below the annual regulatory dose limit of 1 mSv for members of the public”.

Table 9, page 35 on trends of estimated dose limits to the public from Canadian Nuclear Power Generating Sites (mSv) does report that there has been some increase in dose from a number of those sites during the last five years. One would prefer to see no increases even during these outages’ periods with the biggest increase at the Pickering site from 2020 to 2021 (0.002 to 0.0020 mSv). This writer suspects that with more outages and refurbishments these small level increases can be expected in the future.

This report sheds no answer to this question raised by this writer nor active plan to prevent ongoing increases. CNSC needs to issue an action item to ensure not future increases.

2.10 Emergency Management and Fire Protection

It was reassuring to read the in response to the COVID-19 Pandemic licensees were able to demonstrate that they could safely operate their nuclear facilities while ensuring health and safety for their staff. This fall and winter periods are expected to see a surge along with the flue season to impact us all.

An update is needed whether pandemic response plans and business continuity plans will continue moving forward. There should have been some clarity on this question.

RE: Province of New Brunswick EMO

There was an outstanding presentation by NBEMO as the PLNGS licensing renewal public hearing in May of 2022. Presentations such as this one among so many others by submitters illustrate the value of these through Public Hearing for licensing renewals compared to the much more limited public hearing for this ROR public review. There is no comparison from a public engagement participation perspective. The ROR Public Hearing process needs to be enhanced and strengthened. The ROR public review process was subject to a review. This writer is looking forward to any new changes to enhance the public review format process.

2.12 Security

Many would agree that there are more public security threats including occupation in Ottawa earlier this year.

War in Ukraine by an aggressor country who also is close to Canadian territory resulting in Government of Canada deciding to strengthen its security presence in the Arctic including a visit recently by Secretary General of NATO. The most worrisome form from the nuclear perspective is Russian forces weaponizing a large nuclear power generating facility in Ukraine. All these threats or potential threats heighten one's fear and anxiety that bring us to the question.

Are the current security measures adequate? This writer would submit, based on the public information in the Security Sections including 2.12; they may not be adequate. This writer was very disappointed to read “all scheduled Force on Force exercises were pushed back 12 to 24 months in the future to reduce the risk and potential impacts to participants and relevant facilities.”

These exercises should not have been pushed back considering the major occupation of convoy of trucks terrorizing citizens in the National Capital. This other threat any COVID risk used to justify heading off Performance Testing Exercises are secondary to these potential security threats and these NPPs.

2.15 Other Matters of Regulatory Interest

There is reference to NPP and WMF operators continued executing adaptive programs and hybrid program models to ensure continued commitment and communities where PLNGS is located. Webinars on various topics have been welcomed and very informative.

2.16 Indigenous Engagement

Very encouraging to learn of the various CNSC efforts on going commitment to meeting its consultation obligations and building relationship with indigenous people with interest in Canada’s Nuclear Power Generating Sites.

This section covers pages 42-50 with so many positive initiatives in the area of indigenous engagement. It was very encouraging to read this section to be made aware of these efforts and results. It was good to see specific funding and capacity needs as part of this engagement process.

3.1 Darlington Nuclear Generating Station

This nuclear plant among others is in various stages of refurbishment in their facility, 4 reactors potentially, with any of these refurbishments despite great care and oversights, problems and incidents can occur that could adversely impact not only the workers but the public at large as well as the environment. With this in mind, it was reassuring to read under the Periodic Safety

Review that OPG notified CNSC of their intent to commence a periodic safety review intended to review the status of Darlington GS to support operations beyond 2025. There are a number of these nuclear reactor that have been authorized by CNSC to operate beyond their expected operating dates. Any of these extended operating periods in aging plants is a cause for concerns and therefore extraordinary oversight is required by CNSC. This writer is satisfied that these Periodic Safety Reviews will identify any problems that could be detected and if any that cannot be managed, the nuclear reactors would not be authorized to operate until a decommissioning or refurbishment in in place.

3.1.2 Human Performance

The four findings of non-compliance with low safety significance were related to the maintenance of training qualifications records for duty crew and contractors. In this later group, use of contractors over the years been an area of concern for this writer.

All aspects of contractors working in these NPP sites require constant vigilance and attention. There have been too many issues over the years with contractors coming into those facilities encountering situations where training, supervision and general work practices have resulted in non- compliance of CNSC strict safety rules and practices. Practices (p.65)

One does not worry as much with regular permanent staff who are very familiar with the CNSC regulations.

3.1.5 Physical Design

This writer continues to be concerned about the possibility of thinning of these internal metal tubes considering the age of this facility.

That is why it is reassuring that OPG continues to implement and maintain its pressure boundary programs in accordance with regulatory requirements (CSA N285.0)

3.1.6 Fitness for Service

A major concern for this writer is identified in this section related to aging management of structures, systems, and components. Paragraph 4 of this section, regarding the analysis of pressure tube sampling that brought into question the validity of the currently used hydrogen equivalent concentration predictions models. Questions for this writer is how then OPG can demonstrated that the DNGS pressure tubes continue to be fit for services based on an OPG low likelihood/expectations. - see paragraph 4.

This writer comes to the conclusion that methods to accurately determine licensing of these scientific evidence based pressure tubes is far from accurate. It appears that a certain amount of educated guess work and assumptions are part of that process in determining the thinning pressure impacts on these aging pressure tubes.

CNSC will have to be overly cautious and vigilant in its oversight of this area in Section 3.16 - Fitness for Service.

3.1.12 Security Section

This writer was shocked to read that “CNSC staff concluded that OPG did not meet all the applicable regulatory requirement for the applicable regulatory requirements for the SCA Security at DNGS in 2021”. (P.63)

The fact that this resulted in this “finding for medium safety significance within Facilities and Equipment and Security Practices that indicate OPG’s performance significantly deviated from expectations and requirements”.

It was appropriate and significant that “a regulatory warning letter was issued to OPG on February 9, 2022, related to the non-compliance at both DNGS and PNGS and the need for OPG to implement compensatory and corrective measures.

This is exactly what would be expected from the Federal regulator. It must have been pretty serious for a warning letter to be issued in addition to creating a medium safety significance designation.

3.3 PICKERING NUCLEAR GENERATING STATION

The fact that this nuclear power plant is soon to be shutdown, discontinuing commercial operation December 31, 2024: is always a concern as this aging facility is at the end stage of producing power. Any time an extension is requested by the licensee and granted by CNSC raises the question as to whether this is a good idea considering the age of the facility. Despite careful oversight by CNSC such extensions are a cause for worry and concern simply based on internal system could break down causing a nuclear incident.

Those internal mechanical system tubes etc. are vulnerable for deterioration due to impacts of aging systems. CNSC must take enhanced and extraordinary oversight care to ensure that the NPP could separate safety now and beyond any extended operating period (December 31, 2025).

Fisheries Act Authorization - There was no reason given as to why in 2021 DFO held discussions on OPG's request to amend the Fisheries Act Authorization. There should have been an explanation provided here. The commissioners should be provided an explanation at the ROR Commission Meeting.

3.3.1 Management System

Again, under Contractor Management CNSC staff identified two findings of low significance which illustrate that contractor(s) management need ongoing vigilant supervision / and training. This writer considers this Contractor Management area of utmost importance.

3.3.2 Human Performance Management

In respect to OPG's Fire Response Program, there were a finding of low safety significance during an inspection of that program. CNSC staff identified a non-compliance related to the Emergency Response Team that could go below minimum complement by following OPG's procedure and sending these Emergency Response Managers to the hospital when responding to a contaminated casualty scenario. These kinds of non-compliances. P.77

Should not occur considering the adverse impact on workers. There are many references throughout the 2021 ROR where updates on required action items are due after the ROR document is completed. In this section, one such update on the corrective action plan implementation is due by end of August 2022. This and many other updates are expected after the June ROR publication. They should all be presented to the commission meeting in November 2022 and not wait until 2022 Regulatory Oversight Report. They should all be completed in a single document tabled at Commission meeting and attached to the Record of Proceedings. The public members are interested in these completed updates not published in 2021 ROR.

3.3.6 Fitness for Service

This section on page 80 identified an issue during a Type II Pickering Fire Response Program inspection. It centered on Building 37 that was a condemned building following a structural assessment. CNSC staff issued a letter to OPG outlining the significance risk to OPG personnel due to continued use of Building 37.

The licensee should have respected that direction and prevented any and all staff access. Action should have been taken to commence demolishing of this condemned structure. The CNSC did not do that, instead requested OPG to provide justification for usage of Building 37 with OPG personnel continued to be permitted access under certain environmental condition. This is an example of industry regulator closeness where regulator can be too accommodating to the Operator that could potentially involve a safety issue.

As noted above, this issue of analysis of pressure tube sampling that brought into question the validity of the currently used hydrogen equivalent concentration predictive models has been again raised in the last paragraph of page 81. In an industry that is science/evidence based its not all that reassuring to read “OPG has demonstrated that the Pickering Nuclear Generating Station pressure tubes continue to be fit for service based on the very low likelihood that flaws greater than 0.15 mm in depth are expected to exist in the outlet rolled joint region of interest in the population of uninspected pressure tubes in the Pickering links.”

Certain amount of educated guess work when words like “very low likelihood” is used far from absolute evidence-based approach. This writer would have preferred certainty or iron clad guarantees be used when it comes to determining the thinness state of these internal pressure tubes. This last paragraph on Page 81 is unable to provide that kind of certainty which is a concern.

3.3.12 Security

Please refer to my comments above on the Darlington Nuclear Plant / Site that can be applied to the Pickering Nuclear site under the heading of Security. Again, shocking to read “CNSC staff concluded that OPG did not meet all applicable regulatory requirements and CNSC staff expectations for the SCA (Safety Control Area) at eh PNGS in 2021.

It’s not often that CNSC has to write a warning letter which was done on February 9, 2022, related to those non-compliances at both DNGS and PNGS. These non-compliances must have been very significant for such enforcement action to be taken.

There needs to be an update to the Commissioners at the November 2022 Commission Meeting.

3.7 POINT LEPREAU NUCLEAR GENERATING STATION

Licensing

This writer attended the Commission Public Hearing Part 2 in Saint John, NB, and May 10-12, 2022.

Overall, the Hearing (Part 2) was excellent in respect to the number and quality of the in-person presentation from a wide range of intervenors. This writer was impressed by the interest and engagement of the Commission members with the intervenors / presenters. There was a high level of public interest with over 200 written submissions including this writer. PLNGS provided excellent pre-hearing information sharing services to many intervenors including this writer.

The licensee - NB Power has requested a 25-year licence renewal period contrary to many intervenors’ recommendations of 10-year or less licensing renewal period. This

writer was impressed with the quality of public engagement of this licensing renewal public review process.

The commission approved a 10-year renewal of the Point Lepreau licence effective July 1, 2022. The Commission directed NB Power and CNSC staff to provide a comprehensive update on the licensed activities during a public meeting at the mid-point of the licence term. This writer among other intervenors welcomed such a recommendation. This was an excellent directive based on the very high public interest in this licence renewal.

Fisheries Act Authorization

Finally, over an extended period of time DFO determined that the FAA application consultation requirements were met by NB Power. A decision on the application is expected by April 28, 2022. This writer requests that this decision be entered into the public record minutes of the upcoming Commission meeting in November 2022.

Compliance Program

Re: Table 23 - List of inspection reports at PLNGS. There is a report titled Report TII - Non Certified Training Program

My question is where is the report for certified training program? This writer did not see it listed in Table 23, Page 120. This writer requests a copy of publicly available. In my written submission for the licence renewal, this writer identified some issues of concern that did come up at the Part 1 Hearing when the President of CNSC Commission did ask a question to NB Power on certification training. This writer would like to see those issues and questions responded to by the Licensee and CNSC staff to determine if those training issues have been fully addressed if not a time schedule for completion.

The upcoming Commission Meeting would be an ideal time for an update for the Commission members and the public.

This section does note that there were 8 non-compliances of negligible safety significance and 1 non-compliance of low safety significance. The positive information is that NB Power took two corrective actions and no enforcement was needed.

This section on page 121 notes something that caught my attention with the following “CNSC staff are reviewing NB Power’s Governance and plan to conduct compliance verification activities to verify NB Power’s compliance with REGDOC 2.12 in 2022.

Hopefully, CNSC staff can report on the outcome of those compliance verification activities at the November 2022 Commission Meeting.

3.7.2 Human Performance Management

This issue which NB Power notified CNSC of its intention to apply the multiple choice question methodology for its general certification examination is covered in this section. This methodology was questioned by this writer in my submission last year on the 2020 ROR review process. It is noted that CNSC staff approved NB Power’s use of the proposed MCQ examination methodology on a pilot basis for administering general certification examinations. This writer was pleased to see such regulatory approval was granted on a pilot basis. This writer despite CNSC qualified approval is still not all that comfortable with this methodology for such critically important certification qualified staff.

Considering pandemic conditions with COVID-19 that created challenges, it was reassuring to read CNSCC staff determined that NB Power met requirements for managing fitness for duty in 2021 and performance in this area met CNSC expectations. Further this section on Human Performance Management states “There were no hours of work violations or exceedances and no minimum shift complement MSC violations by certified staff at PLNGS. Those responsible for this in the midst of the worse pandemic in a hundred years need to be recognized for this effort and outcome.

3.7.3 Operating Performance

What is reassuring and expected is the statement “PLNGS continued to operate the Station in a safe manner withing the bounds of the operating policies and operational safety requirements.

Regarding the information on PLNGS experiencing 3 outages. The information on the January 18, 2021, lacked sufficient information for the public to understand what actually occurred and how the incident or event caused an outage. These Regulatory

Oversight Reports in reporting such events such as the one reported on page 123, often lack sufficient information for non-technical general members of the public to understand what actually happened that caused these outages in reporting on these events such as outages. CNSC staff need to ensure sufficient information is provided to the public can be adequately informed.

The ROR needs to provide a Table listing the outages or off-line events for each of these nuclear power plants.

These expanded explanations do not have to be technical or complicated. When this writer requested such an explanation on outages from Public Engagement Community Relations official, I was provided a clear understandable explanation of the outage reported on page 123 at PLNGS. The licensee has made this information publicly available. The ROR needs to do a better job listing these outages with time periods. Reliable information is important to the public.

3.7.4 Safety Analysis

There is no explanation as to why there has been such a delay for REGDOC 2.4.1 to be implemented from 2021 to 2024. A brief explanation on what has contributed on what has contributed to such a three-year delay would have been helpful considering its related to safety analysis.

3.7.6 Fitness for Service

Very encouraging to read that NB Power maintained both the critical corrective maintenance backlog and the number of critical preventive maintenance deferrals very low.

3.7.7 Radiation Protection

This writer was pleased to read the following comments from the CNSC on section 3.7.7 of the ROR (P. 125 -126)

“CNSC staff concluded that NB Power met the applicable regulatory requirements and CNSC staff expectations, for the SCA Radiation Protection in 2021.

CNSC staff determined that NB Power’s application of ALARA at the PLNGS in 2021 was compliant with requirements and met CNSC staff’s performance expectations. For 2021, NB Power established dose targets, tracked collective and individual dose performance against approved targets, and undertook various initiatives to assist in maintaining radiation doses ALARA.”

3.7.8 Conventional Health and Safety

Having served on a Health and Safety Committee at my workplace, this writer would like to see not just accident reported as is the requirement, but another classification referred to as near misses of an actual accident. When this writer served on my workplace H&S Committee, we documented such “near misses” to be brought forward at the regular work site health and safety committee. Those near misses of an accident were important for the committee to ensure corrective dangerous conditions were addressed and corrected to prevent a actual serious accident. See example below.

3.7.9 Environmental Protection

The Regulatory Oversight Report 2021 substantiates what has been this writer’s understanding on the matter of environmental protection at the PLNGS not just over the year 2021, but years previously. Therefore, it comes as not surprise to read CNSC staff conclusion in this section the following:

“CNSC staff can confirm that there is no unreasonable risk to the environment passed by the operation of PLNGS.”

3.7.10 Emergency Management and First Protection

Again, it is reassuring to read under this section the following:

“CNSC staff concluded that NB Power has sufficient provisions for preparedness and responses capability to mitigate the effects of accidental releases for nuclear and hazardous substances on the environment and protect the health and safety of persons.”

This writer was present for the NB Emergency Measures Organization presentation at the Part II Hearing in May 2022 for PLNGS Licence Renewal. It was very comprehensive and anyone who read or was listening to it would come to the conclusion that any nuclear accident would be effectively managed to ensure needed emergency measures were executed to help those impacted safely from any harm.

The updated information in this section was welcomed. There may be additional updates not included in this ROR. It would be of public interest to have CNSC staff provide additional updates to the Commission members and the public in this very important public safety issue.

3.7.11 Waste Management

This section reports on the number of spent fuel bundles (5400) transferred to the Phase II of the Solid Waste Management Facility. The spent fuel inventory to a total of 235 cannisters filled which equate to 126898 bundles. This information begs the question:

1. What is the capacity available for the life of the plant?
2. Are there sufficient approved storage infrastructures to store the next 30 years of used fuel from the Station?

The reader may conclude there may not be sufficient room for all the future spent fuel bundles. This kind of clarification could have been included in this section. There was some information presented at the licence renewal hearings. This writer would like clarification on this question. Perhaps next year, ROR for PLNGS Section could provide such clarification.

3.7.12 Security

This section on all the NPPs needed to include at least a brief advisement of the fact that cyber security for nuclear facilities is currently under public review by CNSC to ensure cyber regulations are strengthened. This fact could offer/reassurance to the public who are aware of the ever growing cyber attacks and threats worldwide. An update on the public review of this issue would be of interest.

3.5 BRUCE POWER NUCLEAR GENERATING STATION

The following comments on this section of the 2021 Regulatory Oversight Report will highlight a number of issues that caught this writer's attention while reviewing this Section 3.5 on Bruce Nuclear Generating Station.

Table 18 Page 95, under Management System lists a report contract Management (T-2-INS-01-04)

Refurbishment

It is in the public interest for the status on these refurbishments are now a normal part of each update on the Status of Power Reactors that are presented at each Commission meeting as well as being included in each Regulatory Oversight Report. Considering the complexity of these many refurbishments particularly at Bruce Nuclear Generating Station it's a wonder there have not been more challenges in safely carrying out these projects especially during pandemic conditions, the worse in one hundred years. This writer concludes it is because of the high level expertise dedication and commitment to safety at all levels both by the licensee and the CNSC overseeing these projects.

This writer suspects one challenging area is related to contractors along with supply chain availability of components.

In this section on refurbishment, CNSC staff report it conducted a number of inspections, one of which caught this writer's attention, namely contractor management. This reviewer has read over the years in these Regulatory Oversight Reports many issues related to contractor performance where corrective action was implemented after CNSC picked up issues of non-compliance.

This matter of contractor performance and management, as expected of CNSC with its strong inspection mandate issued findings in contractor management where Bruce Power implemented corrective actions to improve contractor performance. Very pleased to read CNSC staff will continue to monitor this area through future compliance activities. This writer fully supports CNSC's efforts in this area of contractor management. In fact, with so many refurbishments on going at this nuclear power plant, this writer would recommend such inspections be increased. One might consider having dedicated CNSC inspections assigned for the oversight of contractor management and performance while these contractor/workers doing the actual work on site.

This writer recommends CNSC staff compile a data base record on how many staff findings such as non-compliances, problems have occurred related to not only refurbishments but regular contractor work at each nuclear power plant. This writer is familiar with some related to outages. The Commission members may find such a record of interest to assist them in determining to what degree contractor management / performance is real and potential safety issue. Certainly, such a record would be of interest to this reviewer.

3.5.8 Conventional Health and Safety

As referenced above, it was important to note the number of calendar days lost at BNGS A & B decreased significantly from 49 in 2020 to 5 in 2021 due to effective preventative work injuries. The question raised by this writer is whether there was any other reason such as decrease in number of employees working from home or off site due to COVID 19 pandemic conditions? This writer would like to recommend that near misses of accidents be incorporated into the conventional health and safety meetings on site that are mandated under the Federal and Provincial legislation analysis of and corrective actions of accident that nearly occurred known as near misses. This classification can be invaluable in the presentation of reportable accidents. This writer as an employee and member of my former workplace location (VAC office location in Saint John, NB) slipped on a floor that had been just mopped after exiting a washroom. This writer nearly fell backwards luckily, I was able to regain my balance and thankfully did not fall backward preventing a potentially serious head injury accident. This writer brought up this near miss of what could have

been a reportable accident at our Health and Safety Committee meeting. This writer was thanked for bringing this potential accident forward for discussion and action. If I recall, an accident report may not have been required and submitted but corrective preventive action was taken by management to prevent such an accident from occurring in the future. In this case, the corrective action was to ensure janitorial cleaning staff put measures in place to address the floor condition. Secondly, the yellow hazard sign location were to be placed closer to the cleaning site - in my case the sign was not installed at the correct place to alert the employees of the wet floor. Corrective action was taken by management to prevent a real reportable accident in the future. If this near miss had not been reported even informally - if not by a written record, serious future accidents could have occurred. These links of near misses may not be required to be formally reported as required by legislation but this writer would recommend both CNCS and the licensee's document by having employees report them and the Health and Safety Committee discuss them at the regular conventional Health and Safety meeting. Such a recommendation if implemented could prevent accidents and enhance safety at these nuclear generating stations.

3.6.3 Operating Performance

The last line under this section on page 112 caught this writer's attention in reference to the "the incinerator" - more specifically part of this, sentence the incinerator operated for 209.5 days on solids and 236 days on liquids and 236 days on liquids." For some reason, this writer was unaware that there was an incinerator at the western waste management facility at Bruce A and Bruce B. The introduction section 3.6.0 does not mention an incinerator only the "process" "manage the low and intermediate level radioactive wastes generated from the operation of OPG owned facilities". Reference to DSC processing building. In this section there is no mention of an incinerator or an incineration process as there is in 3.6.3 that operates. 209.5 days on solids and 236 days on liquids (P 112). Obviously, an incinerator is a process of burning waste unless this writer misunderstood what occurs in an incinerator. This implies that the burning of waste may end up in a stack vented to the atmosphere after the waste smoke emissions have been scrubbed. In a conventional incinerator, this is what generally occurs. This processing that includes an incinerator raises many unanswered questions that Section 3.6.3 operating performance fails to explain to the public. CNCS staff failed to explain how an incinerator is incorporated into processing radioactive

waste from several nuclear power plants. Are there radioactive emissions emitted from any stack as part of this incineration?

The Commissioners, at the November Commission Meeting, need to ask CSNC staff in the public interest how an incinerator is past of the processing of these radioactive wastes.

Normally air pollution is regulated by Provincial air quality legislation / regulations are such regulatory oversight in place from Province of Ontario?

Is there requirements for the issuing of an Air Quality Certification of approval?

This writer would like to know how much more about OPG processes at this facility referred to in 3.6.0 as “the Waste Volume Reduction Building” and DSC processing building.

The ROR should have had an Appendix that explains for the public this incinerator. This writer would like to see the annual report as mentioned at the end of Page 112.

This includes comments from this community member.