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**Written submission from  
Gordon Dalzell**

**Mémoire de  
Gordon Dalzell**

**Regulatory Oversight Report for  
Canadian Nuclear Power  
Generating Sites: 2018**

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**Rapport de surveillance  
réglementaire des sites de centrales  
nucléaires au Canada : 2018**

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Commission Meeting

Réunion de la Commission

November 6, 2019

Le 6 novembre 2019

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October 11, 2019

# Submission

Gordon Dalzell

2018 Regulatory Oversight Report

# PART A

## Commentary on the Oversight Report for Canadian Nuclear Generating Sites: 2018

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This section of my submission covers includes this writers review and commentary on the Regulatory Oversight Report for Nuclear Power Generating Sites: 2018. This community member carefully read this report and identified issues and concerns within the body of these comments on the sections reviewed and recommendations for CNSC to consider.

In the 2018 Regulatory Oversight Report for Nuclear Power Generating Sites 2018: the executive summary does not include a chart summary for all the sites under performance rating. This is in contrast to such a summary from all the sites available in 2017 report in the final page of the Executive Summary. And this writer's view this is counterproductive in so far as it does allow the public to easily see the comparative safety performance ratings for all the Canadian facilities on one page. It prevents the public in knowing how the facility in their region compares to the other nuclear **sites**.

This former one-page chart listing all the sites with a rating for all safety parameters assessed was most helpful and informative. In this writer's view, CNSC needs to reintroduce the past practice of providing the overall rating for all the facilities on one page as was the past practice. It is an overall comparison easy to see despite the fact, it may not be “the industry practice” as noted in this report. This should not be the reason discontinue this one page comparative summary with an overall rating assigned.

you need to be re-introduced in a 2019 oversight report it's in the public interest despite the fact that it may not be the industry practice, as noted as a reason to discontinue this comparative summary.

## **2 GENERAL AND SUPPORTING INFORMATION**

This is critically important part of this oversight report in so far as it provides background for the assessments in Section 3. It includes notes about the legally binding regulatory requirements for the assessments as well as detailed information about those requirements listed in Appendix E.

### **2.15 Other Matters of Regulatory Interest**

This writer when reviewing the various facilities had noticed this section had been in the 2017 report within the back of each facility. In fact, in my comments provided last year, this reviewer had noted the limited amount of information provided in what I consider to be important section as it includes public information and disclosure, indigenous consultations, nuclear liability, insurance, financial guarantees and environmental assessment. This kind of information describes public information and disclosure programs available with clarity of the information pertaining to nuclear activities that is essential to establishing an atmosphere of openness, transparency and trust between the licensee and the public as described in section

This writer commends CNSC Oversight Report in covering this important information within this Section 2.15 that is required in the CNSC regulatory document REGDOC 3.2.1 Public Information Disclosure that sets out the requirement for public information and disclosure activities.

Providing the key activities and best practices from the licensees all within the one section 2.5 is preferred as opposed to having the information attached to the individual chapters that cover each site is an improvement over 2017. This 2018 oversight report includes this information all together in Section 2.15. This allows the reader to quickly compare and see how each of the licensees had undertaken this important part of the legally binding regulatory requirements. This section gives this requirement more prominence and focus.

I agree with the Report's statement that such information is essential to establishing an atmosphere of openness, transparency and trust between the licensee and the public. I like the format and information captured in the section compared to how the 2017 report covered "other matters" of regulatory interest.

#### Page 81 Indigenous Consultation and Engagement

This writer concludes that this section on page 81-87 was exceptionally well done and most informative. It provided the public with detailed information in the area of indigenous consultation and engagement activities covering all nuclear licensed facilities. Whoever compiled and wrote with section of this Oversight Report 2018 need to be acknowledged for a job well done.

#### **Specific comment regarding PLNGS site CNSC staff engagement activities**

Need to state length of time involved in these engagement activities with indigenous people. PLNGS efforts in this area should serve as a model for the licensee as far as I can determine.

#### Reference to small modular reactor in Canada

Next year report needs to elaborate and describe the content of such engagement activities for the new fourth generation nuclear technologies being researched and developed by NB Power PLNGS.

#### Point Lepreau Site - Focus on indigenous engagement

I note there qualitative acknowledgement from CNSC the word "satisfaction" was not used to describe PLNG's efforts in this area. However, the word "satisfy" was used to describe Bruce Power and OPG indigenous efforts. This appears to be an oversight in not using similar description "satisfy" in the PLNGS indigenous efforts.

In this writer's observations the same following statement should have been made for the Point Lepreau/ NB Power efforts and outcomes under license engagement activities under the binder section on Page 81 – Indigenous Consultation and Engagement

I think the following statement in page 81 should have been made of PLNGS / NB Power "CNSC staff continues to be satisfied with the level and quality of indigenous engagement

conducted by both OPG and Bruce Power with regards to their operations at the Bruce site”. Before such acknowledgements are made, the licensees need to clearly understand what are the standards for the use of the word “satisfy” as a measure of their program with the level and quality of indigenous engagement. The measure in this report should not be subjective.

### Safety Culture

Reassuring to read that licensees periodically conduct safety – culture self-assessments. Those licensees who have implemented safety culture monitoring panels are to be commended including Bruce Power, OPG and NB Power. (Refer to my comments in this Section 2 from last year.

## **2.5 Physical Design**

This writer often reflects and wonders how these nuclear power generating sites can make various modifications while still improving their overall performance of their facilities and ensure there is improvement in safety in the design and operations considering the additional stress and demands on these facilities that in several cases are getting to their end of life cycle.

### Commentary on the statement under Facility Design

*Page 44 – “Facility design and structure design pertain to the overall adequacy of the design of the facility and structures, which are governed by licensees design programs and a number of codes and standards”.*

My concern here is that many of these facilities were for 30 or 40 years and some reaching the end of their operations apart for those being refurbished. When they were built years ago, design standards and codes were not the same as they are today with new design features. I worry that current standards codes would disqualify or be rejected these older facilities designs and structures. A great deal can change in 40 years in term of engineering standards and building codes etc. There needs to be more explanation to help the public understand that even if these facilities are old they are still safe.

I would like the CNSC address such concerns with more information other than what is in the oversight report. How are these older facilities able to keep with newer modern facility

designs and structure design? I wonder if the overall adequacy of the design of these facilities and structures are sufficient to today's enhanced standards. It must be a challenge for these licensees to meet CSA group standard N291 "Requirements for Safety-related structures for CANDU nuclear power plants (2015) considering the age and condition of these older facilities. Of all the area, electrical power systems is one of my greatest concerns notwithstanding CNS Regulatory oversight and the licensee's efforts.

Same concerns for fuel designs and cables considering on One page 44 the report states "cables and critical to the safety and reliable operation of NPP's due to their widespread use as a connection medium for many systems important to safety". Further the report states on bottom page 44 "Canada's operating reactors are aging cables are affected by the aging process. The CNSC requires that licensees of operating NPPs to implement cable condition monitoring and surveillance programs, as well as cable aging management programs to assess the degradation of cable insulation over time." I still worry that this is where a potential accident / disaster event could occur from these old cables.

## **2.6 Fitness for Service**

There is no question as for as this writer is concerned, the CNSC with the many regulatory oversights in place these various nuclear facilities must adhere to the very strong regulations in place. A good example is covered in Section 2.6 Fitness for Service that covers specific areas to ensure the reliability of various systems important to safety. Very reassuring to read REGDOC 3.11 that requires each operating NPP licensee to report the results of its reliability program to CNSC annually. What is even more reassuring is that CNSC staff review these reports to confirm compliance with the regulatory compliance. I have come to the conclusion – no one pulls the wool over the eyes of the CNSC.

### Page 49 Aging Management

Of all the oversight parameters on safety, I consider aging management one of the most important considering the age of most of these facilities apart from those refurbished such as Point Lepreau. Again its reassuring to learn that CNSC requires NB Power Licensees to have component specific, aging management programs as describes on page 49 to 53.

## 2.7 Radiation Protection

Prior to carefully reviewing this section for all the nuclear power sites; I used to think that employees would be subject to higher levels of cancer just by the fact of their occupational exposure. In viewing this section, I am reassured that Radiation Protection Regulations ensure contamination levels and radiation doses received by individuals are monitored, controlled and maintained as low as reasonably achievable. With that standard and objective this writer was unhappy to learn in 2018 the total collective dose for monitored individual of all Canadians NPP's and WMF was 25.9 person – Sieverts p-SV approximately 11 percent higher than the industry wide collective dose reported for the previous year (23-33 mSv) Further, this writer was concerned to learn that the number of persons that received a reportable dose in 2018 (9792) was also higher than 2017 values of 9,273. The report on page 56 covering this section states “The increase in total collective dose was mainly due to the refurbishment activities at Darlington Nuclear Generating Station (DNGS) with other families to undergo refurbishments... The CNSC is going to have to step up its regulatory oversight to ensure such an increase is an exception and not the new normal with these refurbishments. Quite frankly, I cannot see how CNSC staff was satisfied with the licensee’s control for worker dose in 2018 when the report indicates increases in radiation dose levels as notes in page 56, 57, I am not satisfied nor do I expect these individuals exposed to the radiation cited would be either. Having said that, I see CNSC staff has increased the regulatory oversight of these areas of licensees radiation protection programs commensurate with the risks each licensee faced – Page 58 – last paragraph.

### Page 59 – Estimated dose to the public

Table 13 titled “Trend of Estimated Dose to the Public from Canadian Nuclear Power Generating Station sites” shows that doses were well below the annual regulatory dose limit of 1 mSv for members of the public, as well as below 1.8 mSv, which is the average national annual background dose. Point Lepreau the site in the regional area of this reviewer along with the other operating sites, doses to the public, was still relatively small and within regulatory limits. Point Lepreau was 0.0007 mSv.

Section 2.9: This SCA covers programs that identify, control and monitor all releases of radioactive and hazardous substances, and the effects on the environment from facilities or as a result of licensed activities. For the public learning that these licensed nuclear power plants

and waste management facilities can release radioactive substances into both the atmosphere (as gaseous emissions) and bodies of water (as liquid effluents) is unsettling. This writer has learned from some community members who worry about such releases especially those who believe that certain cancer rates are higher for people who live closer to nuclear power plants. To the credit of CNSC with its on line document titled “myths of nuclear safety debunks such false conclusions that are available on line. For reference, here are the facts on such claims. Not everybody believe this, additional public education is required.

There are many myths, misinformation and outright wrong factual information out in the public forum on the subject of health and safety impacts from these Canadian nuclear power generating sites.

The CNSC clearly describes its regulatory safety responsibilities and its mission statement on their website. In my assessment, this oversight report goes a long way to provide the Canadian Public such accurate factual information. Having said that, the CNSC must be vigilant and proactive to monitor the continuing amount of mis information, myths and just incorrect information that is presented as truthful facts by those who oppose nuclear power on ideological grounds. Such groups and individuals have every right for their opinion and advocacy efforts but promoting wrong non-factual information needs to be challenged by the CNSC with science-based factual information. In this writer’s view this oversight report goes a long way to provide Canadians with fact based analysis and information on these nuclear generating sites all covered in this Oversight Report.

Licensees are required to control radioactive releases into the environment to ensure they are protective of human health and environment and do not exceed the regulatory release limits. This writer firmly believes that both the regulatory and the licensees are meeting their regulatory responsibilities so to ensure Canadians are not placed at risk from these nuclear sites where millions of people live. It is reassuring to know that each licensee has an environmental management program to assess environmental risks associated with its nuclear activities and to ensure that these activities are conducted in such a way that presents or mitigates adverse environmental effects. Further there are independent third party audits monitoring and verifications through internal and external compliance audits to ensure these

nuclear sites are meeting the legally binding regulatory oversight from the CNSC. These oversight programs are not voluntary with loose guidelines often found in some other industries in which as a result is often the cause of industrial incidents.

### **Section 2.10 Emergency Management and Fire Protection**

This SCA section covers emergency response plans and emergency preparedness program for managing radiological nuclear and conventional emergencies.

For the public, especially those in the vicinity as well as the regional area of these sites, this entire emergency management and fire protection is of critical importance to reassure the public. It also includes the results of participation in emergency response exercises during the year. This report provides a section that describes the results of these emergency response exercises. I was pleased to read in 2018, the work focused on the Darlington, Pickering and Bruce Power. Provincial Nuclear Emergency Response plants to ensure conformity with the master plan as well as the update preparedness and response provisions since the last versions were issued in 2009. This writer had identified the need to update these site specific emergency response plans and was pleased to see that they were indeed updated in 2018. This is a good example of why it is important for the public, stakeholders and others to carefully review this annual oversight report for these Canadian nuclear power generating sites. The question for the one in six Canadians who live in the area of these nuclear facilities is “are these Emergency Management Plans adequate?”

There is an update on the New Brunswick Emergency Measures Organization (NBEMO) that report that NBEMO issued the new Point Lepreau Nuclear Off-site Emergency Plan in August 2018. It has been made available on line. CNSC staff confirmed that Point Lepreau complied with the new plan. This licensee has been ahead of the curves over the last few years in how it has implemented its nuclear emergency response plans with excellent public consultation as part of that process. This writer was reassured to read that on October 3 and October 4, 2018 NB Power conducted a full scale exercise at Point Lepreau which tested the preparedness, response and recovery capabilities and capacities of more than 35 organizations include CNSC and some non-government agencies in the Point Lepreau Section under Section 3.5.10 there is a comprehensive report just on its emergency management and fire

protection. Two statements from the Oversight report are worth while noting Page 22, “CNSC staff determined that NB Power implemented comprehensive conventional, nuclear and fire emergency response capabilities of all times for Point Lepreau”. Please see this statement in the PLNGS chapter of this oversight report.

“CNSC staff determined that NB Power maintained a comprehensive nuclear emergency preparedness and responses capability that met all the applicable regulatory requirements”.

### **Section 2.15 – Other Matters of Regulatory Interest**

This section includes public information and disclosure indigenous consultation along with other matters. This reviewer could not agree more with the following statement “The availability and clarity of information pertaining to nuclear activities is with first-hand direct knowledge observing Point Lepreau’ s activities, I can confidently say that this has been my experience with Point Lepreau in respect to their public information and disclosure program”. From reading this section, I was very pleased to learn of the various licensees and how they carried out their public engagement programs as described in detail in Section 2.15. - Other Matters of Regulatory Interest. What really stood out for this writer was the section on indigenous consultation and engagement. This was a very through description highlighting the CNSC regulatory requirements.

## **3. NUCLEAR POWER PLANT AND WASTE MANAGEMENT FACILITY SAFETY PERFORMANCE AND REGULATORY DEVELOPMENTS**

### **3.1 Darlington Site**

This writer will provide commentary on section number three titled nuclear power plant and waste management facility safety performance and regulatory development commencing with section 3.1.

Consistent with the objectives set out in the PFP agreement, this writer has reviewed the oversight report with a focus on how this community members attitude, understanding,

confidence levels have affected this and other community members View of this 2018 nuclear power generating station report. At the end of my review of this report, this reviewer will attempt to answer this question along with the results of the same question to the other community members As part of this submission.

First of all, this reviewer will provide highlights, reactions and observations on each of the nuclear sites covered. The writer will apply critical open minded analysis to what is presented in this report.

Darlington site

Considering the station consist of four can do reactor that are rated at 88 1 MW electrical each having had construction started in 1981 and the first criticality of a reactor on tier 1989, it's no wonder refurbishment commands in four phases in October 2016 with the first two phases completed. Considering the complications experienced during the point of pro refurbishment, hopefully there were lessons learned that can be applied to this refurbishment. It is clear in this refurbishment section on page 90 that CNSC are very attentive and cautious to ensure active monitoring and compliance verifications and inspections every step of the way in this refurbishment project.

It is good to see that OPG licensee are committed to several safety improvement opportunities. I see features to improve safety of the plant for beyond design basis accidents will be incorporated into the refurbishment of this nuclear power generating station.

Updates right up to March 2019 are included in this refurbishment section which is welcomed and timely.

One of the common attitudes have by many including this reviewer is that there will be cost overruns that will exceed budget it says for this refurbishment.

This concern from this writer is based on the past refurbishment of the plant approach nuclear generating station site commands in... And completed in... With hundreds of million dollars overruns due to complex problems encounters.

It is my assumption that lessons were learned and such financial overruns will not occur at the Darlington facility. From a public perception and expectation, it is probably better to... Public expectations. This is why this report for next year needs to address this area since any complications will have safety implications if not addressed.

#### Compliance program

Table 17. The list of inspections at this site fails to provide the public with a pass or fail rating.

It describes the safety and control area inspection titled, date inspection report sent but there is no information in this table. As to how will some of the performance codes could be added to this table similar to the legends in appendix E.

This writer asked to use a magnifying glass to read appendix A with very small fuzzy print.

With any inspection in respect to safety, it is important to provide the public with some kind of passes or fail Daisy nation in table 17. May I suggest this for future reports. Providing such easy to see information will provide the public with important information that will provide more confidence building.

Regarding these inspection, there is no indication whether they were planned, included or unannounced spot checks to verify the licensee's regulatory requirements. It is understood such inspections have a regulatory requirement but the public needs to be able to see how carried out and what use The results of those inspections.

It was good to see on page 95 that the CNSC staff picked up on some concerns related to the documentation of OPG management system governance. One particular concern was the use of guidance type of language i.e "should" where a requirement was to be addressed i.e "shall". Big difference between these words in terms of discretionary versus mandatory compliance.

Management of contractors (Page 96)

Last year this writer identified this area as an area of potential in real problems described as non-compliances with “low safety significance” is related to contractor qualification and verification..

I see such non-compliance is still present while reviewing the management of contractors section. First of all, Low safety significance needs to be defined and explained to the public reading this report.

The CNSC report does not specify how CNS he plans to address it's concerns with OPG management of these contractors with compliance activities focus on contractor management by 2020.

CNSC needs to spell out clear expectations to the licensees. Good to see the statement "CNS he planned to address its concerns with OPG's management of contractors with compliance activities. This is really important during this refurbishment periods.

In in my opinion, this whole area has the potential to be very problematic. It's the "archilles heal” for lack of a better analogy for incidents to occur at this and the other nuclear sites.

Page 97 it is certainly not reassuring to read CNSC staff identified recurring deficiencies with respect to procedures use an idea runs in the refurbishment organization at Darlington generating Station.

Thankfully, OPG identified this as a focus area for improvement and committed to improving procedure use an idea runs as part of its human performance program.

CNSC is going to have to keep OPG feet to the fire on this far to ensure it address safety incidents.

Under human performance program personal certification is one of the key areas to ensure public confidence in the operation of this and the other sites covered in this report. Similarity

just as important is fitness for duty. As expected this writer notes CNSC staff determined that OPG met the applicable regulatory requirements for worker fitness for duty at Darlington in 2018. One would not expect anything less in respect to compliance.

### **3.1.3 Operating Performance**

In respect to the change in ratings from last year's report that was due to CNSC. the staff's made some changes in its criteria. There needed to be a clear explanation of these ratings changes referred to industry practices? Who is addressing these changes? What precipitated CNSC staff refining its criteria for satisfactory and fully satisfactory?

In terms of public transparency, they need a more clear explanation of these reading changes. I did not see such an explanation-it does not state that the rating change I not due to a decline in performance. So why change DWMF rating from a fully satisfactory last year to a satisfactory this year? Nothing seems to have changed.

I would like to recommend these really thing changes needs to be given a more fuller explanation as part of the executive summary or in the media releases and the web reference announcing the release of this report. Without such information the public could see these changes were not due to a decline in performance or for other safety related criteria.

Darlington nuclear generating station -On October 2018, CNSC staff identified seven reportable occurrences under our EGDOC 3.1. One that were dented fied by OPG's as reportable to the CNS see but we're not submitted in a timely manner. As for this Community member, there is no excuse for this type of non-compliance so the regulator can carry out its regulatory responsibilities.

### 3.1.4 Safety analysis

This section on safety criteria is critically important and essential to build public confidence and give the public reassurance they need. All the sections under this heading for all the sites serve the public interest so they can sleep better at night especially those millions of people who live in diversity and around areas of this and other nuclear power generating sites. One area of concern on page 102, regarding submission office safety analysis for Darlington waste management facility, is the requirement to submit such a report every five years. I would like to see that five-year reporting requirements changed to three years which seems reasonable.

An explanation as to why five years is required to assist the public in understanding those rating changes.

#### Aging management

The section of the report under the heading Darlington nuclear generating station is one that creates some apprehension and so far as learning that DNGS is license to operate up to 235,000 effective full power hours. At the end of 2018, the longest operating pressure tubes as seen 204, 000EFPH'S of service and therefore they were not predicted to approach the current licensing unit it before The scheduled reactor refurbishment. Getting too close for my comfort zone, I worry about metal fatigue or pressure break in one of these pressure tubes at this facility reaches the end of its licensing limit. It appears the CNSC is allowing this facility to go to it's limits and respect to critical ageing equipment.

#### Application of a ALARA

It is noted that during one of the planned outages (Unit3), A worker was wetted with tritiated heavy water resulting in an unplanned exposure. This event along with an increase in outage scope and radiological conditions that were worse than expected, caused DNGS to miss its outage does target.

Such events for workers during refurbishment illustrate for this writer the potential for more radiation exposure for those working on the refurbishment projects. These events should serve

as warning signs of the danger of workers being exposed to radioactive material during those refurbishment activities.

It is noted on bottom of page 108, CNSC staff continue to apply additional vigilance with respect to those received by workers during refurbishment activities, including increased frequency's and enhanced scope of surveillance and inspection activities in unit two.

Anything less than this approach, would have diminish the public inspections for our federal regulators. If anyone had any doubt CNSC is enhancing its scope of surveillance and inspections activities in unit two, all you have to do is keep reading into the paragraph top of page 109.

It states OPG reported six events related to workers performing radiation work for unit two refurbishment without adequate to symmetry or radiation protection oversight in 2018.

Shocking example of inadequate preventive steps to protect workers impacted. Quite frankly, this is sloppy supervision of those responsible to ensure workers are kept safe.

The more I read this oversight section on Darlington, the more worried I get. I sent CNSC shares and such concerns from their follow up actions as described in the last sentence on page 108 and top off page 109 as cited above.

#### Radiation protection program performance (Page 109)

Just when I thought I had read the worst cited above, I will read the bottom paragraph of page 109 top off 110, A key statement in the CNS see oversight report states the following "in 2018, OPG submitted 14 event reports to the C&C staff from both online operations and the refurbishment project related to radiation protection that identified poor work practises operations and the refurbishment project related to radiation protection that identified poor work practices as a contributing factor. as a contributing factor.

CNSC staff concluded that the frequency and nature of the event was indicative of an overall downgrade trend in performance of the radiation protection program. Despite the fact that OPG made improvement efforts and changes related to refurbishment requirements as to

update is radiation action level, CNS he will need to be very vigilant and Attentive with this licensee in this area of radiation protection program performance.

This last example raises questions as to what penalties should be assigned to this licensee. I did not see any record of warning letters administrative penalties, fines or any enforcement actions. Does CNSC use such penalties? Should be considered for significant non-compliance in fractions.

What is in excusable is the CNS system of determination on page 3 off page 111 that OPG did not adequately adopt it radiological a hazard control program to adjust to the changing radiological environment of a refurbishment outage.

Time for some early retirement packages for those who allowed this to occur. This information does not promote public confidence that is for sure.

#### 3.1.12 Security and cyber security

Considering what the public either experience or hear about on this, Subject the four sentence coverage of this potential security interest is given much to like coverage. What is reassuring is included in those three sentences which can be summarized with the following

1. The cyber security program at DNGS met the applicable regulatory requirements
2. OPG continued to update it's cyber security program to comply with in 290.7.14 cyber security for nuclear power plants and small reactor facilities by November 30, 2019
3. CNSC staff were satisfied with the progress in 2018. This is reassuring but this aspect of security needs to be constantly updated with top-notch resources or experts to deal with such security threats.

### **3.3 Pickering Site**

The oversight report states the Pickering nuclear generating site consists of eight CANDU reactor units 1234 went into service starting in 1971. Units two and three were defueled in

2008 and remain in a safe shut down state. There are no plans to put them back into operations. Unit 5678 continues to operate safely since they were brought into service in 1983.

Reading this introductory information, three significant conclusions come to mine.

1. PNGS over the years has provided Ontario with clean energy which otherwise could have easily been offset with coal, natural gas or crude oil.
2. This station provides millions of people with electricity with its daily operation, little to CO2 emission are generated.
3. The most glaring reaction is recognition that this nuclear power generating station is old that will end commercial operation by December 3, 2024
4. This later fact raises the attention that this facility is ageing and how critically important it is for CNSC to mentor this operation

This oversight report covering PNGS does just that and after studying this chapter, this reviewer is more than reassured that despite potential challenges and demands on the equipment getting old and more vulnerable to break down in the sea will ensure this operation will continue to be operated safely until it sees us commercial operation by December 31,2024.

This writer has more confidence in the regulatory then the licensee despite their own rigorous and responsible oversight actions the reason for this is that upset conditions, unexpected events despite being plan for quick create challenges beyond the licensee's capacity to manage.

Hopefully this writer is wrong on that conclusion.

Pickering Waste management facility P 123-124

It is noted that all OPG is authorized to construct these additional DSC storage buildings in phase 2. The report states the additional storage buildings would allow OPG to store all of the

used fuel generated at PNGS to the end of its commercial operations life 2024 in the new DSC processing building would increase OPG processing capabilities

This writer did provide comments and question which can be referred in the CNSC report for PWMF from 50 DSCs per year to approximately 100 DSCs per year.

This is a significant increase in nuclear waste capacity all to be stored above ground. In this reviewer's opinion, there should be more explanation for future steps plans for how this material will be stored on the long-term under the nuclear waste management organization mandate.

At this point, reading the section implied that all this nuclear radioactive waste material will be left in these expanded storage unit and buildings in indefinitely.

What needs to be explained in this reference to processing capabilities, I am concerned about how this nuclear waste material will be process and why would it be in buildings.

At Point Lepreau, their waste management facilities are concrete silos near the facility. In this top paragraph on page 124 there is no reference to concrete silos only buildings. More explanation is needed to re-assess and help the public understand more about these expanded storage plans. Issues of safe storage and security come to mind.

#### Fisheries act authorization

It is noted that under terms of the authorization, or PG is required to report annually on impingement and entertainment monitoring results as well as progress made on implementing the compensatory measures.

This annually report needs to be made public ideally integrated into future oversight years report. Website link at these so public can read the results into progress report, it ..... be in the appendix section for future reports.

#### Integrated implementation plan Page 125

Very pleased to read that OPG perform a periodic CT review in accordance with CNSC regulatory requirements. It is reassuring to see the purpose of the PSR in that it is to confirm and enhance the safety case for continued operation of PNGS unit in 2024 (end of commercial operation).

Another example of strong regulation in place under the mandate of the CNSC if that regulation was not in place what is the likelihood of such being done? I assume it would be very low.

In conclusion on this periodic safety review, rest easier knowing this PSR was completed considering that millions of people including the writers grandchildren live not all that far from the Pickering site.

Comments on page 125 table to zero and third paragraph on page 125.

This writer was very pleased and reassured that CNS he staff increased regulatory oversight of OPG's implementation of the LIP is documented and monitored through an internal dashboard. This increased oversight is very timely and important considering that PNGS is getting to its end of his commercial life in 2024.

This writer worries that some unexpected deterioration could occur putting the facility in a vulnerable safety situation despite all such possibilities been planned for. As this writer reads this section, it sounds like this site is potential more vulnerable for and accident including severe accident as OPG is implementing design changes to ensure additional barriers exist to prevent a beyond-design-basis accident from progressing to our severe accident and mitigate the consequences if a severe accident occurs.

It is good to see such actions being implemented. I suspect the millions of people who live in the surroundings and regional area would be aware of such a potential as well as the preventative actions being undertaken by both CNSCNOPG the licensee. That is why the annual oversight report is important concerned about safety of this nuclear power generating sites should read this report about this site in their area.

### **3.2.2 Human Performance Management**

From a human performance management perspective, it is as expected and reassuring to learn that OPG at a sufficient number of personal at the Pickering site for all certified positions. Further all certified workers at PNGS possessed the knowledge and skills required to perform all their duties safety and competency.

In the section conduct of licensed activities, CNSC concluded that OPG met or exceeded the applicable regulatory requirements for the conduct of licensed activities at the PNGS and met them at DPWFMF in 2018. Good to read the statement from this oversight report.

### **3.2. 4 Safety Analysis**

Considering the age of this facility, this writer was very reassured to read under safety analysis the following "CNSC staff concluded that the safety analysis SC at Pickering met or exceeded the performance objectives and applicable regulatory requirements. PNGS as a result received a fully satisfactory rating this year unchanged from last year."

Safety analysis P136 under update, this writer provides the following comment.

There is reference to an updated Pickering safety report expected in 2019. This report needs to be made public sooner rather than later. If it is now completed, it should be presented to the Board members at the November meeting and discussed.

Hopefully it can be incorporated into the records of proceedings from the upcoming general meeting in early November 2019. It is in the public interest to release the safety report as soon as it is completed.

### Severe accident analysis

This type of analysis provides the public that this licensee and the regulatory requirement have plans and interventions to deal with any severe accident situation. It increases public confidence in my view.

It is noted that CNSC staff were reviewing this report at the end of 2018. It will be almost a year by the time of the general meeting reviewing this report and therefore should be presented to the board members for their review at the public meeting in November 2019. Some of the safety severe accident analysis reports are so important; the public need to be able to read them even under a separate reporting mechanism for example website.

#### Structural integrity

These two paragraphs at the bottom of page 140 are most reassuring considering the age of the Pickering site. This statement in the first paragraph under the section states that the CNSC staff concluded that SSCR required for safe operation continued to meet the structural integrity requirements established in the design basis or in the CNSC accepted standards and guidelines for PNGS in 2018.

#### Effluents any mission control releases (Page 146)

When it comes to airborne radiological releases from the Pickering site, even when they remained below the regulatory limits and environmental action levels, there is still information out there in the public forum from various groups that claims that certain cancer rates are higher in population live in the vicinity of nuclear power plants. The question is that is there any adverse health impacts despite the fact that airborne radiological emissions are below the regulatory limits.

Question is are such regulatory limits health protective? There should be a health expertise assigned to conduct an analysis related to potential health impacts. Perhaps these regulatory limits need to be revisited especially for what environment climate change Canada refers to as vulnerable populations such as children. With new scientific research information being discovered it may be time to refresh these regulatory limits to ensure that the levels are still health protective.

In respect to appendix H, titled derived release limits and major logical releases to the environment.

I was very pleased to read that CNSC is making radionuclides release data more readily accessible to the public. Further pleased to learn that the CNSC and National Pollutant Released Inventory are working together to establish a working relationship.

There is important information in appendix H, but it's difficult to understand for even reasonably well informed community members. It needs to be a more user-friendly version below appendix H, something easier for the average citizen to understand.

Protection of public Page 1482 page 149

Prior to reading the section titled protection of the public, this Writer questioned whether the public individuality of the Pickering site was protected. I was happy to read the following statement from the CNSC oversight report

CNSC staff confirmed that the public individuality of the Pickering site was protected and that there were no expected health impacts resulting from the operation of Pickering right in 2018. P148

The only question I have is where are the reference studies to substantiate this statement? What and where are the research studies or analysis completed to draw this conclusion?

I assume they originated from an updated ERA report for the Pickering site to support the licensee renewal of the PNGS and PWF.

This report needs to be linked to that report. In the final version of the oversight report, could you electronically link reattach at the end of this section. Perhaps the report could be included in the appendix section. This type of report is important for the public to be able to access especially when there is so much missed information online that claims certain kinds of cancer are more commonly found in areas closer to nuclear power plants.

### 3.2.10 Emergency management and fire protection

In this important section of importance to the public in diversity of this nuclear power generating station site, there is no manager of the training exercises results. How did they do, no recommendation, no mention of lessons learned. Reference to the protected area, but not defined is it 20 km?

Reference made to side boundaries but not defined as to radius from the nuclear power site. This would have been helpful. I would have liked to see the final version include that kind of boundary information. Again it is reassuring to read that the CNS the staff determined that OPG maintained a comprehensive nuclear emergency preparedness and response capability that met all the applicable regulatory requirements. OPG continue to support our site emergency management organization and commitments in 2018. There is no information on how OPG will support offsite emergency organization know what are the commitments made. Search this is a public document of increasing public interest affecting millions of people in the regional area. There needed to be more information especially how those notifications of an emergency would be communicated to the public.

### 3.3 Bruce A and B

Again there is a reference to rating change based on industry best practice for the “fully satisfactory” rating. There needs to be a further explanation of what is the basis or criteria on “industry best practice” – what are the criteria for these practices?

Since there is a change of what “fully satisfactory” means from the 2017 report, it is confusing without an explanation

Again the introduction section points out just how essential Bruce A with its four CANDU reactors Unit 1-4 with gross power of 831 MW each is along with Bruce B with its four CANDU reactors 5-8 with a gross power of 872 MW each. With all eight units operational it is very clear that millions of people, communities, and industries depend on this clean energy source. Without these and the other units, one can only imagine such electricity demands

being met with fossil fuels, natural gas, coal, and crude oil. These nuclear generating units have saved thousands of lives from the adverse impact of burning fossil fuels.

### Refurbishment

Hopefully, lessons learned are incorporated into the refurbishment work planned for Canada 2020 (Unit 3-8) with so many units from various sites in the report it is always a worry that something might go wrong despite the best planning and workmanship. Unexpected problems and other events impacted Point Lepreau causing substantial delays and over runs for the project. The report does not highlight any specific anticipated problems expected with refurbishment. There must be some challenges and there should have been some reference to what they are. There needs to be a more comprehensive explanation of the refurbishment projects ahead.

Table 25 describes an incident where 5 drums of heavy water leaked out of containment into the dikes are of the powerhouse causing tritium and loose contamination hazards in the area. At Bruce Power Unit 8 there was a service transformer fire and another event. The report further states there was a good outcome in that there was no impact on nuclear systems, no radiological releases and no impact on the public as a result of this event. These events illustrate to this writer that there are going to be events, accidents, and I suspect there will be more once the refurbishment commences. There should have been more information provided on the safety issues associated with refurbishments of these reactors.

### Management of Contractors Page 163 -

This is an area of concern this writer had raised in my 2018 submission. I predict that with so many contractors, and their workers from the community working on the refurbishment projects, there are going to be incidents, including dose exposures.

To give you an example, years ago at Point Lepreau in 1995, a temporary plywood cover was accidentally left inside a boiler by a contract worker. This resulted in a complex intervention to clean up the primary heat transport system. Cost overrun is another area of concern.

### Page 165 Fitness for Duty

This reviewer was concerned to learn in this oversight report that Bruce A & B exceeded the hours of work limits at Bruce A and B for certified staff on numerous occasions in order to maintain the minimum shift complement”. There was one shocking example of exceedances where certified staff worked over 16 hours in 24 hour period at one at Bruce A and three at Bruce B. Could have put the public at risk. Thankfully, these kinds of events are reported to the CNSC and find their way into this 2018 oversight report for corrective action.

Page 165 Paragraph above Section 3.3.3

This section of the report makes reference to Bruce Power was working toward the implementation of the CNSC regulatory documents REGDOC 2.2.4 and REGDOC 2.2.e. The CNSC should have set implementation to complete dates for this licensee to comply with these legally binding and important potentially safety related regulations “working towards the implementation is too open ended and not demanding enough considering how important they are especially. Fitness for Duty Volume II Managing Alcohol and Drug use. There needs to be time scheduled given to this operator. It is however comforting to read that “CNSC staff concluded that Bruce Power met or exceeded the applicable regulatory requirements for the conduct of licensed activities at Bruce A and Bruce B in 2018. “Further, Bruce A and Bruce B operated in a safe and secure manner within the bounds of its operating policies and secure manner within the bounds of its operating policies and principles and operational safety requirements and with adequate regard for health, safety, security and radiation and environmental obligations”.

This is just another reason why this oversight report is important so we the public can get important information on their safety performance aspects of their nuclear sites.

### **Section 3.3.4 Safety Analysis**

Bruce A and Bruce B should be commended for their “fully satisfactory” rating in this critically important area of safety analyses. Being prepared for every safety related event or situation increases the public’s confidence that they will be prepared if ever there was a significant event.

### Aging Management (Page 174)

It states that Bruce Power is licensed to operate up to 300, 000 equivalent full power hours for fuel channels. This section does not state how many hours have been used up to date. In the Pickering chapter, it stated current hours and how many hours left before reaching its licensed limit maximum. Considering the age of the facility, this is important information for the Board members and the public to know. I would recommend that information be included in the final approved report. In reading this section on aging management, this winter gets the sense that great care and monitoring will be required to ensure the physical mechanical components did not fail as they continue to reach their maximum end of life capacity. One wonders if the shutdown, refurbishment may have to be moved up from the current target dates set out on page 157 (introduction). It will be interesting to see the results of this “technical basis document for a new fracture toughness model in 2020”. It appears that Bruce Power may want to increase the Heq validity limit beyond 120 ppm. CNSC should be very cautious to allow any increase in such limits.

### Estimated dose to the public ( Page 176)

This reviewer was very reassured to read this first paragraph under this topic:

“CNSC staff determined that Bruce Power ensured the protection of the public in accordance with the radiation protection regulations. In 2018, they reported estimated dose to members of the public from Bruce site was 0.0017 mSv, well below the annual public dose regulatory limit of 1mSv”.

### **Section 3.3.8 Conventional Health and Safety**

I noticed there were no stats provided on ‘near misses’. When this writer served on a Health and Safety Committee at my former work place, “near misses” of an accident were documented and investigated and as such, a near miss of an accident was important to understand how to prevent a real accident in the future. I would recommend CNSC request licensee’s to track near misses in their conventional health and safety programs. If not an explanation should be provided.

### **Section 3.3.9 Assessment and Monitoring**

Since I fundamentally have confidence in the work of CNSC staff, I take comfort in the statement “CNSC staff concluded that the public and environment in the vicinity of Bruce Power were protected”. Having said that, it’s been 2 years since staff conducted a review of environmental monitoring stats with no independent environmental around Bruce A & B was completed. The most recent results form 2016 is available on the CNSC’s IEMP webpage. Further, staff indicated that there were no expected health impacts in the vicinity of Bruce A & B. Are there health professionals including licenced medical doctors on the CNSC staff who review such health impact analysis? This writer would recommend more information on the impact on health of emissions from this site be explained in the oversight report.

#### Page 181 – Nuclear Emergency Preparedness and Responses

With respect to this very important activity, Bruce Power was planning a full scale emergency exercise named Huron Resilience to be held in 2019. I assume this exercise should have occurred by the time of the CNSC General meeting scheduled for November 6-7, 2019. If that is the case, I would like CNSC to provide a summary update on the result of that exercise. Further lessons learned and an implementation plan with target dates be presented to the Board members and the general public who can tune into the public session. This report should be circulated on the Bruce Power website, if not already actioned to reassure the public that Bruce Power and other power authorities will be equipped to handle a nuclear emergency with effective preparation and responses.

### **Section 3.3.12 Security**

#### Drills and Exercises

In reading this section, this writer is left with the impression that there were some issues and outstanding corrective actions to satisfy the CNSC. At the November 2019 Board General Meeting the Board members need to be provided an in-camera update report on these corrective actions.

### **Section 3.3.13 Safeguards and non-proliferation**

The question here is why didn’t Bruce A and B quality for a fully satisfactory rating? The Board members at the November General Meeting need to be provided with an explanation as

to what is preventing Bruce Power from reaching that fully satisfactory rating in this safety area of significant public concern considering the world we live in.

Considering the state of the world and potential interference from outside threats it's more important than even to reach the top rating under Safeguards and non-proliferation covered in 3.3.13.

### **3.5 POINT LEPREAU**

In reviewing this section of the report this writer was much more familiar with this facility having been an intervenor for the licensing renewal in 2016. Additionally, this writer followed carefully the EIA process for the solid radioactive waste management facility (SRWMF) in 2005 over the year, I have had the opportunity to tour the facility and attend information sessions and open houses, in respect to emergency management and fire protection programs. This writer participated in this public review of the 2017 oversight report thus provided this writer with some first-hand experience reviewing this extensive and thorough report. I was familiar with the structure of the report and what to expect in terms of what was covered. Because of past familiarity of both the facility itself and the CNSC Report, it definitely was easier to understand compared to the other sites reviewed in this report. One aspect of the information in Table 31 Performance ratings for Point Lepreau 2018 is that CNSC reviewed its criteria for rating specific areas under the listed criteria. Further, I see CNSC's criteria for fully satisfactory ratings based on "industry best practice". For the public reading, this report and explanation of why these changes were made. Further it appears that rating changes for "fully satisfactory" were based on what the nuclear industry preferred based on the industry's best practice. There is explanation as to what are these industries best practices. When it comes to rating under safety, the CNSC as regulatory has to be careful not to give in the industry preferences. The public explanation is needs a clean explanation. The regulator has to be seen as very independent and although has an on-going relationship and involvement with the licensees it makes to its own rating description and not to take its directions from the nuclear industry.

#### **Binder 3.5 Table 3**

Following paragraph, it would have been better to have provided an explanation of CNSC refined criteria for “fully satisfactory” other than basing changes on industry best practice. What is best practice for industry may not be best practice for the federal regulator. It might have been better to have written “ CNSC reviewed its criteria for rating the specific areas under the SCAs. CNSC staff also refined its criteria for fully satisfactory after consultations with the industry (not based on industry best practice). Public need to know CNSC is also independent and not subject to giving into industry best practice”. Public perception of this separation of roles is critically important at all times. Having raised this issue the writer firmly believes that the CNSC is very independent in its oversight regulatory duties and responsibilities. It is because I believe this is to be consistently true this report that the information provided under.

Table 3, Page 204 caught my attention as a perceived variation from the information provided throughout this report. When information such as this is not fully explained then one can infer and inaccurate conclusion. What is of more significant to this writer regarding Point Lepreau section, is the statement “CNSC staff concluded that NB Power operated Point Lepreau safely, uphold its responsibilities for safety and promoted a healthy safety culture:.. This is consistent with my conclusion based on reviewing the documentation during the licensing renewal hearings as well as reviewing past oversight report and other consultation with this facility.

Comments on the following topics:

#### Fisheries Act Authorizations

From reading this section, NB Power submitted a preliminary self-assessment of serious harm to fish due to cooling water intake in April 2016. CNSC staff reviewed the assessment. Then NB Power revised the Fisheries Act self-assessment to CNSC in January 2017, then an extension with a new completion date of December 31, 2018. This section describes additional delays with a decision ..... Fisheries and Ocean Canada will take the lead as primary regulatory agency (June 2019). Back to square one again where it is noted that NB Power was planning to submit a revised application for a Fisheries Act Authorization to Fisheries and Ocean Canada. Considering that NB Power a preliminary self-assessment of serious harm to fish in 2016 and reviewed by CNSC in April 2016; it was disappointing to learn that protective mitigation to protect fish from serious arm is still on –going. The long

period of time to problem solve this issue is unacceptable. This issue needs to be expedited. The final question is when will NB Power planning to submit a revised application for Fisheries Act Authorization.

### **3.3 GENTILLY**

# PART B

- Overview of Public Attitudes on Nuclear Safety
- Review of Literature and Public Information on the Topic of Safety

## Commentary #1

This intervenor's submission on the public review of the Regulatory Oversight Report for Canadian Nuclear Power Generating Sites: 2018 has two objectives:

1. Review this report with a focus on how the attitudes understanding and confidence levels of the public have been influenced or straighten or weekend by this report and how it affected their views of 2018 NPGS report.
2. Summarize the findings and recommendations in a written report to be submitted to the CNSC Commission.

This writer also included an overview of the commonly held attitudes, understanding and beliefs of Nuclear Power and how such may impart their acceptance of the findings in this CNSC Oversight Report.

The public attitude understanding and confidence levels of the public with respect to nuclear power facilities including safety needs to be understood within a wider societal context based on how the public attitudes, understanding and confidence levels in those nuclear power facilities are formed even prior to knowing anything about the CNSC,s NPGS report. Apart from these interested parties, stakeholders as well as of those living in close proximity of these nuclear plants, it's this writer's view that for the most part, the general public in Canada are not well informed on the fact that such an oversight report published by CNSC report card, is available and even less familiar on the content of this report.

This is problematic and that the public may not be getting quality information on the state of safety of these Canadian Nuclear Power Generating sites.

This writer will identify recommendations for the board's consideration to address those problems at the end of my submission in Part D titled **Summary of Recommendations**.

It is important at this point to highlight some of these public attitudes, understanding and confidence level for the public in respect to the issue of safety of this Canadian nuclear power generating facilities subject of this recent CNSC 2018 oversight report.

Over the last 40 years of nuclear power development in Canada, there has been an array of information out in the public forum from both those who favoured nuclear power to those who are fundamentally opposed to it as well as those who take no position on such.

Certainly, the federal regulator, Canadian Nuclear Safety Commission, as well as the nuclear industry, the licensees have all weighed in on the issue of safety. As one would expect, the industry and licensees present nuclear energy in positive terms.

At the other end of the public information spectrum, there has been a wealth of information that question is whether nuclear power for electrical generation is safe or not.

In my view, public opinion has been shaped by their fear and anxiety as a result of these major nuclear accidents over the last 30 years.

Those who opposed nuclear power have been very effective in helping to shape the public attitudes on this energy source through their own research, interventions, public commentary and public reviews of various licensing applications and renewals of those sites as well as their own public communication on this subject or safety of nuclear power plants. There are many environmental public interest groups whose public statements raise questions on the safety aspects of nuclear power for generation of electricity.

It is only been about 8 years since the first CNSC Oversight Report on these nuclear power generating facilities was published for public review and comments. The majority of Canadians from what this writer can determine are not that familiar with this safety report. This review were as part of this submission provided a copy of this report to a small cross-section of community members in Saint John, NB, and asked them to view it and complete a brief questionnaire to attempt to validate this reviewers impressions. The methodology utilized in this exercise is included later in this submission.

On the one side of their pendulum is the information on safety presented by the federal regulatory authority CNSC as presented in their annual report title the Regulatory Oversight

Report for Canadian Nuclear Power Generating Sites: 2018 in addition to this information from various licensees as well as the nuclear industry itself.

Many environmental public interest groups and individuals often provide information to the public that these questions whether these nuclear facilities are operated safely. For the general public at large, the question is: who are they supposed to believe?

This is important question, considering millions of Canadian (1 in 6) lives in regions of Canada where these nuclear power generating sites are located including two of my adult children and grandchildren.

As part of this exercise, this reviewer was carefully examined the CNSC Oversight Report as documented above in Part A.

In this section Part B, this writer reviewed some of the publicly available information from some of the more well-known public interest groups with a focus on the safety aspects of nuclear power plants.

There are multiple information sources out there in the public forum that affect the public's attitude, understanding and confidence level on the issue of safety of these nuclear plants that makes up considerable amount of electricity generation in Canada especially Ontario.

The question to be examined is how accurate is the information disseminated to the public on both sides of the safety issues available to the public through many public information forums?

Some of the most powerful influences, in forming these attitudes, have been those three major nuclear incidents over the last 30 years that have had an impact on the public's attitude and belief and confidence level regarding these Nuclear Power Generating sites and operations.

In the recent published book called “A Bright Future – How Some countries have solved Climate Change and the Rest Can Follow” by Joshua S. Goldstein and Staffan A. Qvist, these authors examine three nuclear accidents in respect to safety.

Their analysis includes the 1979 at Three Mile Island when a reactor melted down after overheating. It is important to note that the containment structure prevented radiation from affecting the surroundings. That reactor design prevented the radiation material from impacting the surrounding environment. The author’s note that this accident happened just as fictional movie “The China Syndrome” captivated audiences. The public saw this reactor accident as proof that nuclear power was a disaster in waiting just as this movie had implied. The fact that the containment structure worked as designed kept the radiation from leaking was lost in a wave of panic.

### **Commentary # 2**

Additional commentary on public attitudes on nuclear power plants.

Since the Fukushima nuclear incident as well as the Chernobyl there have been an increase in public concerns about nuclear energy. One possible reason for this increased concern is the public’s perception of risks associated with nuclear power.

Aspects of this potential risks play an important role in the public’s perception of nuclear energy and those reactions such as fear and anxiety are the major elements of such a negative attitudes in respect to nuclear power generating stations in the vicinities where these large nuclear power generating plants are located. For my review of this subject, these fears and anxieties are lessen with people who live within the areas where these nuclear facilities are located

### Reference:

- Journal of Environmental Psychology, Volume 5, Issue 1, March 1985 page 87 to 97.  
Title: Public attitudes to Nuclear Energy - silence and anxiety
- NB Power – past public survey of participants who live in the vicinity of Point Lepreau Nuclear site supports that conclusion found in the literature referred.

### **Commentary #3**

This writer also reviewed the document published by the Committee on Radioactive Waste Management appointed by the UK Government in 2003.(CORWOM)

My following comments are gleaned from this report Chapter 6 - Communication in Public Understanding. This material is offered for the purpose of adding to this overview of public attitudes on nuclear and how negative views could be addressed.

It is this writer's view and reinforced after reviewing some of the research on attitudes and knowledge on nuclear power generating station, this writer discovered that most people feel they have inadequate levels of knowledge on nuclear energy.

This cited report notes that scientist and environmental public interest groups are most often the most trusted to provide such information.

Nuclear licensees and nuclear regulatory authorities were trusted by only half of the people surveyed. Degree of trust increases in countries with nuclear power sites and programs are located.

There is no question in this writer's mind that education and accurate communication are crucial to improving understanding of the benefits of all energy technologies which include nuclear.

The public primarily trust scientists and Environment Public interest organizations on nuclear matters. Role of public interest groups can play an important role in keeping the public informed to learn more about the safety performance of these nuclear power generating stations in Canada. Many of these public interest groups carry out that function very well with a high level of expertise.

The CNSC in addition to the nuclear generating plants, notify the public on their website that this Oversight Report is available by providing a link. Environmental public interest groups

could do the same. These ENGOs are highly respected and many have an extraordinary level of knowledge on the topic of nuclear power much of which of which focusses on issues of safety including risks.

If these environmental public interest groups, were to provide a link on their website, the public may be more likely access the CNSC Oversight Report. Once accessed, they could review it for themselves, provide comments and ask questions to the CNSC.

If the public were to do so, they could read the safety report and make their own assessment on whether these Canadian nuclear power generating station sites are safe.

If the public interest groups were to provide such a link with a recommendation to read it, it could serve the public's interest in promoting science-based information to the public.

There is another advantage for such a public interest group to participate in this public review; it is by providing comments on this report.

The environmental public interest groups with their extensive expertise on nuclear power could offer their own analysis, critique to this Oversight Report as it is a document subject to public review. This is what this community member is participating in at this time. One of my motivations is to promote public's interest, awareness and participation in this particular CNSC public review process. There is only a handful of Canadians who submit public comments on this Oversight Report which is unfortunate.

By such public participation, the regulator can learn much as well and then enhance their already robust regulatory oversight of the nuclear power generating sites.

I would like to see the environmental public interest organizations become more involved in this public review process for these yearly CNSC Oversight Reports on these nuclear generating sites.

**Commentary #4**

This writer reviewed the document by Gordon Edwards titled Nuclear Power Exploding the myths by the Canadian Coalition for Nuclear Responsibility (CCNR). This article was dated March 2001.

The purpose of this review was to examine one of the myths #4 in this article titled Nuclear Power Plant is clean and safe.

Since the purpose of this writer's submission is to provide commentary on issues of safety related to Canadian nuclear power generating site, it is relevant to examine what information the public are getting from a nuclear public interest groups they may turn to for such information on nuclear safety of these facilities.

This writer was checking to see if there was any reference to the federal nuclear power regulator, specifically, the CNSC and its role to ensure Canadians are kept safe from on with the operations of these nuclear plants.

There is reference to the Atomic Energy Control Board that was replaced with the current Canadian Nuclear Safety Commission but no such reference of that this regulatory body is responsible for the safe operation of these nuclear power plants. No link to the CNSC website could be located in this reference material cited above.

The point of raising this is to point out that when it comes to public information on nuclear power plants safety, there is a need by public interest groups to ensure that the publics are informed and that there is, in fact, a federal safety regulator, the CNSC, who provides information on safety performance issues of these facilities in their annual report titled Oversight Report for Canadian Nuclear Power Sites: 2018 recently released and under public review.

By contrast, all the licensees on their websites post this report that is now available, with a direct link to the CNNC website for those millions of Canadians, who live near one of these sites being informed that such a report on safety performance of these sites helps them obtain important information on this important subject area.

For those Canadians would prefer to learn about safety of these facilities and who turn to environmental public interest groups, they should be able to learn that there is a federal safety regulatory body that oversees that these facilities are safely operated. It would be a public service to ensure Canadians can be aware that there is a quality report on the safety of these sites.

This writer examined the main webpage for nuclear power plant safety but was hard pressed to see any notice that this important on nuclear safety what is available. By contrast, the licensees on their websites advise the public such report is available with a direct link to the report. All this writer is saying is that the CNSC Oversight Report exists; here is the link to it if you want to learn more about it on these nuclear sites. The environmental public interest groups in my view have a responsibility to alert their members and the public that there is such a report and here is the link.

Since this report is open for public comments such as what this writer is participating in, these public interest groups could use this public comment period to carefully analyze this report and submit their comments for the public record. The CNSC could encourage them to participate in these public review processes.

Their expertise on nuclear power could provide the public with a critical analysis that would serve the public's interest and provide the CNSC with important feedback to ensure issues on safety are not missed and the regulatory body is "kept on their toes" sort of speak.

It should be noted as well that that some of these public interested groups did provide comment on past reports with many very involved in the various licensing hearings.

### **Commentary #5**

There were other two nuclear accidents also covered in this 2018 publication of "A Bright Future - How Some Countries Have Solved Climate Change and the Rest Can Follow" by Joshua S. Goldstein and Staffan A. Qvist.

The following is taken from this publication. In chapter 7 titled Safest Energy Ever, the authors reviewed the three nuclear accidents that received extensive publicity and have impacted the public's view of nuclear power safety as these writers point out in their cited publication above.

In 2011, there was a very significant earthquake and tsunami on the east coast of Japan. There were two nuclear power plants in that area one Onagawa with three reactors and the other, Fukushima Daiichi.

The Onagawa power plant reactors are all shut down normally without incident nor were any radiation released. No one was hurt as we all know it was a different story for the Fukushima Daiichi nuclear power plant. The reactors at this facility all depended on back up diesel generators to keep coolant flowing. They were all flooded by this massive tsunami which the plants seawall could not contain.

The authors note that the problem was not the reactor design, but the fact that all the backup generators were located in a location vulnerable to flooding with inadequate seawall.

As a result the core of one reactor overheated into a radioactive mess and released hydrogen gas that exploded breaking the containment structure. Radioactive material leaked into the surrounding environment and ocean.

The author state “a panic and botched” almost unnecessary evacuation occurred displacing hundreds of thousands of residents in this area.

The question, how much harm that radiation did is subject to controversy. There were conclusions reached by US agencies including World Health Organization. The experts all reach the same answer to the question how many people were killed, either directly through radiation exposure or likely to die later through elevated rates of cancer in the population.

The answer approximately is zero. The author cited above provide references that draw them to conclude there was no nuclear disaster at Fukushima. There was a natural disaster of

biblical proportion, a small consequence of which was a very expensive and disruptive but non-lethal industrial accident at the Fukushima power plant followed by an unnecessary and botched evacuation.

The unnecessary evacuation of hundreds of thousands of people may have caused 50 deaths among patients moved from hospitals in as many as 1600 deaths in the longer-term do to elevated mortality from causes such as obesity, diabetes, smoking, suicide among psychologically stressed evacuees.

Elsewhere in Japan by contrast, the earthquake and tsunami themselves killed about 18000 people, injured many more.

The authors summarize those findings with the following statement:

So here is an accounting of the toll of the 2011 earthquake tsunami, earthquake and tsunami: 18,000 killed nuclear power plant disaster nobody killed Botched evacuation, perhaps in the order of 1000 people killed.

As a result of this event, countries like Japan and Germany banished nuclear power and shut down perfectly good safe nuclear power plants. Japan closed 54 reactors, Germany eight more. All remainders closed six years later. Those were replaced mostly by fossil fuel including a lot of coal and those fossil fuels polluting the air with particulates and toxins increase in cancer and emphysema in the population.

Although an exact estimate is difficult to make the deaths from this switch to diesel fuels were certainly in the thousands each year or easy over 10,000 in six years. These authors state fear of radiation kills a lot of people but radiation rarely kills anyone. This writer suspect that this well researched information from these authors will be a surprise to many who have covered this on the media.

This kind of information carefully researched by the cited others in their book mentioned above is in sharp contrast to the general public's perception that there was this natural

disasters but the focus always seems to focus on the Fukushima “nuclear disaster”, in truth there was no nuclear disaster at Fukushima. No wonder the public are confused.

Let's examine the second and third other famous nuclear power accident. Three Mile Island was the most serious nuclear power accident in the United States. In 1979, a reactor partially melted down when it overheated, but the containment structure prevented radiation from affecting the surroundings. It was expensive and harmless. Unfortunately, the accident happened just as the fictional nuclear power disaster movie titled the China Syndrome starring Jane Fonda was captivating audience everywhere.

The third the reactor accident as proof that nuclear power was a disaster and waiting as the movie had implied. The fact that the containment structure worked, keeping radiation from leaking was lost in the wave of panic.

The third nuclear power accident Chernobyl subject to recent Netflix movie cited by the authors noted above occurred in a reactor that did not have a containment structure. This horrific event was caused by bad design and a series of operator errors resulted in significant release of radiation in the environment.

The Soviet government tried to keep it secret and the radiation spread across northern Europe before the government finally admitted the problem. This government response meant that life-saving actions such as providing iodine pills to local residents did not happen.

The Chernobyl reactor was eventually encased in a concrete unit and an exclusion zone off 1000 square miles around the plant were evacuated.

The Chernobyl accident, the world's worst nuclear plant accident in history was far less deadly by many than recent earthquakes, hurricane, industrial accidents or epidemics have been.

Again, the author in this publication cited in chapter 7 that this counter's review and quoted provides 35 pages a references that covers all the four chapters of this recently published book quoted above.

The authors on page 93, sums up the safety record of nuclear power plant over more than 50 years, encompassing more than 16,000 reactor years. Here is what they say:

“One serious fatal accident in USSR with possibility overtime to about 4000 deaths, one Japanese disaster that resulted in no death and one American accident that destroyed and expensive facility but otherwise just generated vast quantities of fear and hype”. This writer concurs with their conclusions.

In the US, nuclear power continues to produce about one fifth of the nation's electricity supply and has never killed anyone.

By contrast, the question for the coal industry is, how do other energy sources such local stack up in terms of safety?

It is certainly far more dangerous than nuclear energy. Coal kills at least 1 million people every year worldwide mostly through particulate emissions.

Because the above information is not generally known and itched in the public consciousness, much misinformation causes the public to be fearful of nuclear because they believe it's unsafe. Hopefully, if Canadian could get easier access and understand the CNSC the Oversight Report for Nuclear Power Generating facilities in Canada, their fears that nuclear is inherently unsafe would be alleviated.

The CNSC; therefore, needs to be more proactive to get the message out there. Just as the report states, Canadian nuclear power generating facilities are safe. There are no doubt much of the public concerns about nuclear power come down to a fundamental understanding on the level of radiation. Radiation is a normal part of human existence and varies a lot in daily life. There are many sources where people are exposed to low levels of radiation.

The unit that measures the impact of radiation that people receive is the millisevert. Background radiation is in our daily life in average around 3 mSv/year per year. Just smoking a pack of cigarettes, per day adds 9 mSv/year. Working on an airline crew travelling the New York to Tokyo route adds 9 mSv/year because of cosmic radiation is stronger as high at high altitude. Another exposure related to fact, granite is radioactive so living in a granite risk location, increases one's exposure compare with one year sedimentary soil. Source of this information is from “ A Bright Future” cited above.

Medical procedures also add to radiation exposure and overall account for about one third of the radiation to which humans are exposed - the other two being natural background. Again when one reads all the media coverage and public interest group’s material on radiation from nuclear power facilities, people become unnecessary fearful for no valid reason. This creates an emotional based fear not founded on factual and accurate information. No wonder the public have tis inherent fear of nuclear power for energy production.

#### **Commentary #6**

Part of this submission apart from reviewing the CNSC Oversight Report 2018 has attempted to examine public attitude on nuclear power. This was done by reviewing publicly available information on the fear and anxiety often found in the public forum including from environmental public interest groups who are opposed to nuclear power. Clearly, there is information on those website that question whether nuclear facilities are safe in addition to other areas of objections.

For this submission, this writer examined their information on the topic of safety. This segment of the submission Part B will identify some of this commonly held attitude and believes about nuclear power. The origin of such out of use identified. Not everyone believes Canada nuclear power generating station sites are unsafe.

The subject of this public review is the CNSC’s Oversight Report for Canadians nuclear generating site 2018 clearly concludes as stated in the executive summary:

“CNSC staff concluded that the NPPs and WMFs operated safely in 2018 and that the licensees upheld their responsibilities for safety and promoted healthy safety culture. This conclusion was based on detailed staff assessments of findings from compliance verification activities for each facility in the context of the 14 CNSC safety and control areas. The conclusion was supported by safety performance measures and other observations.

This writer concurs with their conclusion that these Canadian nuclear power generating sites are operated safely.

As part of this exercise, this writer completed a book review on the recently book publication title *A Bright Future - How Some Countries Have Solved Climate Change and the Rest Can Follow* - By Joshua S. Goldstein and Staffan A. Qvist

This book has a chapter that explores the topics of fear and anxieties held by many in respect to nuclear power.

The author of this book examines such held views and examines through the extensive references and research concluding that these views that nuclear power is unsafe are unfounded and not based on actual factual information based on their own extensive analysis of factual information.

Obviously when it comes to nuclear safety, there are often two sides to every story. The side of the story presented in this particular publication deserves public attention and review as it dispels many myths and misinformation on the subject of nuclear power commonly held by the public.

What role do the environmental public interest groups play in perpetuating these fears and anxieties over the issue of safety of nuclear power? This writer after reviewing some of their public communications concluded that they do play a role perpetuating some of these fears on nuclear power the public deserve.

How many of these public interest groups advised the public that this Oversight Report is available annually by providing a link on their website? This writer could not locate such a notice with web links that this report is available and is open for public comments such as what this writer is doing with my submission. This writer will provide further information on this within the following pages.

### **Commentary #7**

#### **RE: Commentary on Public attitude on Nuclear Power**

In exploring the public's attitude, understanding and confidence levels and how they impact their views on the CNSC Oversight Report, it is worthwhile to consider how individual and public attitude are formed

Public attitude towards any subject develop over time with many factors in that development.

What people are exposed to in their childhood, development, family life, values, moral beliefs, education, socialization, media exposure are just a few factors that all contribute one's attitude formation towards any subject area including attitude on safety as it pertains to these nuclear power generating facilities the subject of CNSC Oversight Report.

In the Journal Energy Policy titled Nuclear Power, Climate Change and Energy, Security Exploring Public Attitude (2011), the abstract states:

“During the last decade there has been a significant increase in public concern about nuclear energy. One possible reason for this increase is the public's perception of risk. Research has shown a considerable divergence in public and expert assessment of the risk associated with nuclear energy. It would be argued that qualitative aspects of these risks play a crucial role in the public's perception of nuclear energy and that reactions such as fear and anxiety are the major variable of attitudes to the building of the new nuclear power stations and one's neighborhoods.”

It is also clear; however, that differences in the perception of these risks do not embrace all the relevant aspects of public acceptance of nuclear energy. Public reaction is also related to

more general values and beliefs, and the issues of nuclear energy is firmly embedded in a much more wider moral and political domain.

This research paper review raises the question that despite the conclusions in this CNSC oversight report that conclude all these nuclear power generating sites operate it safely, many people will not believe it because their reaction to nuclear energy is related to their own general values and believes systems.

This means that the CSSC will have to work much harder and get this report out there in the public domain and be prepared to defend it by engaging stakeholder's interested parties and the public at large in respect to its finding.

### **Commentary #8**

In respect to the public's perception of whether nuclear power generating station is safe, it is important to review many of the claims promoted by those in society who are against nuclear power.

For those who are against nuclear power, some of the public interest who are opposed to nuclear power, many objectives are often identified. A good example is the Beyond Nuclear 2019 communication title small modular reactor. And why we don't need them ([www.beyondnuclear.org](http://www.beyondnuclear.org))

There are 12 reasons presented. For this submission the only ones to be presented in all the anti-nuclear positions will be safety. They are:

1. SMR pose a danger to Public Safety
2. SMR cost cutting depends on weaker safety and security regulation
3. SMI present nuclear proliferation risks
4. SMR don't solve the radioactive waste problem

Although the oversight report centers on nuclear power generating facilities and nothing to do with SMRs, anyone who has studied and read this Oversight Report knows that Public Safety

is absolutely front and center with the CNSC. All one has to do is like this reviewer to read this report with the regulatory requirements monitoring and supervision to ensure the public is kept safe. If the public is unfamiliar with the work of the CNSC with its oversight responsibilities, one could easily be influenced or informed by the anti-nuclear movement material online that takes the position that nuclear power generation may be unsafe.

That is simply not correct and this CNSC Oversight Report establishes that fact by presenting some evidence based information on the safety of these Canadian sites.

In thinking about nuclear, one should always ask “as compared to what”? And the answer is compared to coal; the world's dominant and fastest growing fuel the leading cause of climate change the fuel that kills millions of people a year.

### **Commentary #9**

#### **Nuclear Power Safety and Risk: Public attitude and perceptions**

Despite nuclear power generating facilities declared safe as concluded in the science-based analysis in the CNSC 2018 Oversight Report, subject of this review, there is a large portion of Canadians who do not accept this conclusion based on their own developed analysis and conclusions as well as their perceptions of its risk and their fear of nuclear power.

As carefully as knowledge and referenced by The authors of A Bright Future - How Some Countries Have Solved Climate Change and the Rest Can Follow - By Joshua S. Goldstein and Staffan A. Qvist.

have a bright future examine the question with the question why would people shut down nuclear power plants over fear of safety but allow coal plants that are far more dangerous to continue operating?

In Chapter 8, the authors review some psychological reasons including

- People assess risk partially by how memorable or dramatic the event is. People over estimate the probability of events that are easier to imagine or more viewed.

- Driving is far more dangerous than flying but people fear flying more than driving because a plane crash is large scale and dramatic.

This process could be applied to a nuclear power plant accident that is dramatic such as if a real disaster like Japan's earthquakes/tsunami gets cross wired in our mind. Nuclear reactor accidents are perceived to be potentially catastrophic events.

Nuclear power triggers risk perception on multiple dimensions. A 1987 review of the psychology of risk perception points to nuclear power as the most salient example of a disconnect between expert opinion and public perception. (7) cite Ref: Paul Slovic "Perception of Risk" Science 236, April 7, 1987, 280-2285.

This research conclusion presents challenges for CNSC efforts to inform many in the public that even with this science-based Oversight Report published annually, many may not believe its conclusion that these nuclear generating plants are operated safely. The fact there has not been any nuclear accident in Canada should provide reassurance and increase the confidence level.

Just having this report publicly available will not in itself alleviate public fear and anxiety.

Surveys of Americans regarding attitudes towards risk show nuclear power to have distinction of scoring at or near the extreme on all the characteristics associated with high risk. These risks were seen as involuntary, delayed, unhuman, uncontrollable, unfamiliar, potentially catastrophic, and severe...

Reference: Paul Slovic, Baruch Fischhoff, and Sarah Lichtenstein (1981), "Facts and Fears: Societal Perception of Risk", in NA - Advances in Consumer Research Volume 08, eds. Kent B. Monroe, Ann Arbor, MI: Association for Consumer Research, Pages: 497-502.

So what are the challenges for CNSC to get the message out there to offset these fears and perceived dangers of nuclear?

Certainly fear of radiation is another source of anxiety for many people that is associated with nuclear power generations, especially for those who live in the vicinity of one of these nuclear plants.

The oversight report provides solid science-based monitoring results for exposure close to both the public and employees working inside these facilities. This reviewer has complete confidence in the CNSC's reporting and conclusion on this area of radiation exposure site section of report.

Despite the safety reassurance in the report, many people question the information especially during a severe accident event or an unplanned crisis situation at one of those facilities.

Radiation is something we are all exposed to every day. Nuclear power contributes very little compared with other activities such as flying in a jet or living at high altitude or getting medical scans.

As previously noted, dangers of radiation are embedded in people's culture; especially in movies called "China syndrome" is one that comes to mind. It was released in 1978 before and after the Three Mile Island nuclear accident. Of all the nuclear fears, ones associated with cold war and its connections to nuclear weapons is entrenched in the public conscientiousness, especially for baby boomers who recall such a nuclear plant accident.

With all this on the layers of fear, anxiety and misinformation around the safety and risk of nuclear power, is it realistic to expect the CNSC see to be able to reduce or change public attitudes towards nuclear power which is used to generate electricity in the various nuclear power plants covered in this Oversight Report. There are some initiatives that CNSC could implement. These include:

- Promote oversight report
- Set up information session in various part of the country to provide accurate information to the public

# PART C

- Community Outreach
- Results of Questionnaire and Analysis
- Recommendations

## **Recommendation to the CNSC**

1. It is recommended that CNSC organizes either by itself and or with licensee a public information session to present the report on the facility within the vicinities and the regional areas of these nuclear sites. CNSC staff who is working on these sites could assume responsibility for these public information sessions on the Oversight Report on a yearly basis.

This was done in the past in the vicinity of the Point Lepreau Nuclear Generating Station – under the leadership of the PLNG Community Affairs group. General public, community members living in the vicinity of the site were invited along with other stakeholders and interested parties.

2. Based on this writer’s own analysis and careful reading of the Oversight Report, both for the last couple of years, along with feedback from survey participants, this writer believes the report is difficult to read and understand. As one survey participant put it “written for the insiders for insiders (those closely involved with the nuclear industry either as regulator, licensee or involved stakeholders). This Oversight Report presents as not being designed or written for general public consumption. It is recommended that the Executive Summary be expanded in such format and content that it would facilitate an easier to read document.

For those who wish to drill down into the details, the current format and content needs to remain as it is currently organized and written.

3. Notwithstanding the point raised on easier reliability, the CNSC's Oversight Report provides the kind of information that is essential to report to the public. The content of the safety topics covered is excellent and expected under the legislation and regulatory responsibilities of the CNSC.

This writer would never recommend that this report be weakened or summarized that would result in the current information not to be made available to the public. As noted, the Executive Summary could be expanded and written in a format that could be understood by the wider public. Further, the Oversight Report could include the same key information but in an entirely different readability with illustrations and a more user public friendly version.

4. The release of the report needs to be reviewed for the purpose of giving its release more of a public profile visibility (media, press conference) with both CNSC expertise as well as Chair of the CNSC Commission be available for the public release to highlight the report as well as to encourage the public to review it and send in their comments. In other words, give the public review aspect attention it deserves within the context of the public review process in place.
5. Considering there is conflicting information in the public domain on the issues of safety of nuclear power and these nuclear power generating sites, the CNSC, the federal safety regulator, has a responsibility to set the record straight and correct misinformation, myths and just wrong facts often presented by many public interest groups that if not corrected can cause confusion and unnecessary fear on whether these nuclear facilities are operating safely. The public have enough to deal with when it comes to fear and anxiety. Having to be worried and stressed on whether the nuclear facility in their region are safe or not should not have to be another added stress to their lives.

Oversight Report concludes that these facilities are indeed safe and meet all the regulatory standards as summarized in the Executive Summary.

CNSC needs to reach out to the public interest groups for the purpose of requesting that this Oversight Report is publically available and can be accessed with a web link to the report.

This would serve the purpose of being informed that this annual report is released. This would allow the public and members of these public interest groups interested in the nuclear issues to be alerted the report is now available. This could enhance public participation in the public review process currently underway.

6. Licensees need to continue their practice of alerting the public that this Oversight Report is available with a link to the CNSC site to make it easier for the public to access this report. Additionally, the licensees need to notify the public especially those who live in the vicinity of one of these plants. For example, PLNG published an article in their newsletter that focussed just on the CNSC and its regulatory role.

This writer attempt to examine some of the publically available information on the issue of safety of nuclear power specifically regarding nuclear power generating sites included in the Oversight Report. Additionally, a survey questionnaire was prepared and distributed to 15 individuals including some environmental public interest groups who follow nuclear issues to gauge their reaction to the Oversight Report.

7. Part C above covered those informal findings. This elementary effort could be expanded by having the CNSC undertake a formal survey to test out some of these findings documented in this submission. This could provide the CNSC with more accurate information on how the public access, use, understands this important report.
8. It is recommended that the word satisfactory used to describe one of the four rating classifications be re-evaluated. In the public domain, the word satisfactory implies bare minimum. It is also implies that you can and should be able to do a lot better, often a reaction a parent might react to when reviewing their child's report card. For

example, some for a performance review such a word implies you are just making it, with this rating you may not receive your pay raise.

Obviously a professional polling service provider would have to be engaged in such an exercise.

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In the 2018 Regulatory Oversight Report for Nuclear Power Generating Sites 2018: the executive summary does not include a chart summary for all the sites under performance rating. This is in contrast to such a summary from all the sites available in 2017 report in the final page of the Executive Summary. And this writer's view this is counterproductive in so far as it does allow the public to easily see the comparative safety performance ratings for all the Canadian facilities on one page. It prevents the public from knowing how the facility in their region compares to the other nuclear sites.

This former one-page chart listing all the sites with a rating for all safety parameters assessed was most helpful and informative. In this writer's view, CNSC needs to reintroduce the past practice of providing the overall rating for all the facilities on one page as was the past practice. It is an overall comparison easy to see. Despite the fact, it may not be “the industry practice” as noted in this report. As the reason to discontinue this one page comparative summary with an overall rating assigned.

You need to be re-introduced in a 2019 oversight report it's in the public interest despite the fact that it may not be the industry practice, as noted as a reason to discontinue this comparative summary.

## Summary - Conclusion

Based on a careful reading of the owners report for Canadian Nuclear Power Generation Sites 2018 this writers confidence remains high that these facilities are operated safely despite the issues in the first part of my submission (part A) This conclusion on my part is due to the through regulatory oversight efforts of the CNSC both in its regulatory responsibilities under the multi-faceted regulations in which these regulations are monitored assessed and managed without this high level of expertise , practice to ensure these strict regulations are followed this winter would not be able to have that high level of confidence.

Not with standing that the report can be challenging to read and understand for the typical community member, this writer would not want to see this mainreport watered down for easier public consumption. These Nuclear Power Generation Sites are very complex to operation with the potential for things to go wrong if not operated under the strict regulatory controls. For that reason this report with the way it is presented and written is essential to provide the public with the information they need to determine the safety status of these Nuclear facilities considering about 1 in 6 Canadians live in the regional areas of these sites.

As noted in my recommendations changes to the executive summary could be considered to make that section more public user friendly.

This writer reviewed some (3) of the commonly held nuclear accidents over the lasty thirty years that have in my view and others affected the public fear and concerns that nuclear power used for generation of electricity may not be safe. In my view as started in my recommnedations the CNSC has to be more proactive in getting the findings on these sites out to the broader community. This will be essential as these fourth generation Small Modular Reactors are in a period of future development and licensing.

More effort is required to spread the word to the wider community of interests such as environmental public interesy groups, interested parties. For such groups who interact within the public forum, targeted information sessions could be made available and can be part of this submission this writer reviewed information in the public domain That contributes to the often commonly held fear and axiety of nuclear power. The question this writer struggles with was to what extent if any such attitudes, beliefs and confidence levels after the public

acceptance of the CNSC Safety report. This writer concludes that for community members who live in the vicinities of these facilities or and associate with the industry or see such sites in terms of economic benefit, their attitudes around safety of the sites in their region was generally more positive and the oversight report didn't really change their attitudes .

Based on a careful reading of the owners report for Canadian Nuclear Power Generation Sites 2018 this writer's confidence remains high that these facilities are operated safely despite the issues in the first part of my submission (part A) This conclusion on my part is due to the through regulatory oversight efforts of the CNSC both in its regulatory responsibilities under the multi-faceted regulations in which these regulations are monitored assessed and managed without this high level of expertise , practice to ensure these strict regulations are followed this winter would not be able to have that high level of confidence.

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More effort is required to spread the word to the wider community of interests such as environmental public interest groups, interested parties. For such groups who interact within the public forum, targeted information sessions could be made available and can be part of this submission this writer reviewed information in the public domain That contributes to the

often commonly held fear and anxiety of nuclear power. The question this writer struggles with was to what extent if any such attitudes, beliefs and confidence levels after the public acceptance of the CNSC Safety report. This writer concludes that for community members who live in the vicinities of these facilities or and associate with the industry or see such sites in terms of economic benefit, their attitudes around safety of the sites in their region was generally more positive and the oversight report didn't really change their attitudes around safety of the sites in their region was generally more positive and the oversight report didn't really change their attitude and belief that these sites are run safely. In other words their understanding, attitude and confidence levels stayed the same.

Based on reviewing the information on line from many public interest groups who oppose nuclear power, it was clear that questions on the safety of this energy source are identified that results in many in the public forum to really question whether these nuclear sites, are in fact, safe despite the fact that the CNSC issue a science and evidence-based report that concluded these sites are operated safely. Questions is who does the public believe An effort was made to examine both sides by carefully reviewing the oversight report as well as the information the topic safety from some of the public interest groups who have been opposed to nuclear power this was covered in that aspect of my submission.

Finally Part D covered the results of a survey questionnaire this writer prepared and distributed to fifteen community members and some interested groups . The purpose of this exercise was to gage what these participants thought of this.

Oversight Report with an expectation that their views and attitude towards nuclear power would be reflected in their responses especially from those environmentalists or ENGOS who were asked to complete this questionnaire. Only three out of eight in this category responded by filling out a questionnaire. For the three that did complete it. There was no indication that their negative views of nuclear were reflected in this questionnaire. For the other five who did not wish to participate in this exercise, one can only speculate as to the reasons for not completing this questionnaire on their impressions and reactions to the oversight reports.

It is a coincidence that these environmental public interest group known for their opposition to nuclear elected for not completing the questionnaire after efforts to make it available to them for review.

It was disappointing that they chose not to provide their reaction to the oversight report that focused just on safety issues. This is even more noteworthy considering their perceived position on nuclear safety issues.

In conclusion, the CNSC needs to be more proactive in making this report available to the public domain by making it more readily available.

One way to do this is to engage and invite the various public interest groups to participate in the public review process currently with the CNSC ROR.

(continued)

# PART D

Gordon Dalzell  
Intervention

# Appendix A

- Appendix A- Completed Questionnaires of the Participants

NON FINAL

# TABULATION SUMMARY OF RESPONSES

awaiting return of other sheets

## Canadian Nuclear Safety Commission – Questions and Answers

1. Prior to reviewing the Canadian Nuclear Safety Commission's Oversight Report for Canadian Power Generating Stations, I felt that that these nuclear facilities operated safely.

- Strongly agree 4+1 5
- Agree 2
- Neutral 2
- Disagree 0
- Strongly disagree 0

If your answer is no, please explain \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Were you aware that there is a federal regulator known as the Canadian Nuclear Safety Commission whose role is to provide oversight for all these nuclear facilities in Canada?

- Yes 18 + 1 9
- Not Sure
- No

3. My opinion changed after reading the report.

- Strongly agree 2
- Agree 3
- Neutral 3+1-4
- Disagree 2
- Strongly disagree 1

Please explain how your opinion changed \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Following the review of the report, how confident are you that these nuclear facilities operate safely?

- Very Confident 6
- Confident 1
- Neutral 0
- Not very confident 1
- Not at all confident

1 Participant accepted to review the report but circumstances prevented him from completing and returning it with regret

5. After reviewing the report, my level of confidence on the safe operations of the plant

- Increased
- Stayed the same *//////*
- Decreased *//*

6. After reviewing the report, my level of concerns

- Increased */(1)*
- Stayed the same */////(5)*
- Decreased *//(2)*

7. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas concern you?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

8. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas increase your confidence ?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

9. Reading this report helps me understand how these nuclear stations are supervised for safety?

- Strongly agree *//////*
- Agree *///*
- Neutral
- Disagree */*
- Strongly disagree */*

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. Do you find the Oversight Report easy to read and understand?

NO 11111 5 PARTIAL NO 1  
yes 111 3

11. Which of the following statements best represent how thoroughly you read the report?

- 1. I read most of it 111 (P) 3
- 2. I read part of it 11111 5
- 3. I read a little of it / 1
- 4. I read none of it

12. CNSC should promote the availability of this report.

- Strongly agree 11111 5
- Agree 111 3
- Neutral
- Disagree / 1
- Strongly disagree

13. I could easily locate this report on the main CNSC website

- Strongly agree 11 2
- Agree / 1
- Neutral 1111 4
- Disagree / 1
- Strongly disagree / 1

14. Which of the following statements best represent how thoroughly you read the report?

- I read most of it 1111 3
- I read part of it 11111 5
- I read a little of it / 1
- I read none of it

SAME AS #11

Additional Comments:

Name (Optional): \_\_\_\_\_  
Representation/Status: \_\_\_\_\_

### Canadian Nuclear Safety Commission – Questions and Answers

1. Prior to reviewing the Canadian Nuclear Safety Commission's Oversight Report for Canadian Power <sup>Nuclear</sup> Generating Stations, I felt that that these nuclear facilities operated safely.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

If your answer is no, please explain na

2. Were you aware that there is a federal regulator known as the Canadian Nuclear Safety Commission whose role is to provide oversight for all these nuclear facilities in Canada?

- Yes
- Not Sure
- No

3. My opinion changed after reading the report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Please explain how your opinion changed My opinion did not change based on the report as I already had an understanding of the CNSC's role.

4. Following the review of the report, how confident are you that these nuclear facilities operate safely?

- Very Confident
- Confident
- Neutral
- Not very confident
- Not at all confident

5. After reviewing the report, my level of confidence on the safe operations of the plant

- Increased
- Stayed the same
- Decreased

6. After reviewing the report, my level of concerns

- Increased
- Stayed the same
- Decreased

7. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas concern you?

1. Environmental Protection
2. Waste Management
3. Fitness for service

8. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas increase your confidence ?

1. Packaging + Transport
2. Safety Analysis
3. Fitness for Service

9. Reading this report helps me understand how these nuclear stations are supervised for safety?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Comments This report helps me understand supervision for safety, however the rating system could be more clear and provide greater context.

#1

10. Do you find the Oversight Report easy to read and understand?

Yes, the language used was clear and well referenced.

11. Which of the following statements best represent how thoroughly you read the report?

- 1. I read most of it
- 2. I read part of it
- 3. I read a little of it
- 4. I read none of it

12. CNSC should promote the availability of this report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

13. I could easily locate this report on the main CNSC website

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

14. Which of the following statements best represent how thoroughly you read the report? (same as #11)

- I read most of it
- I read part of it
- I read a little of it
- I read none of it

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_

Name (Optional): [REDACTED]

Representation/Status: \_\_\_\_\_

SAINT JOHN COMMUNITY MEMBER

## Canadian Nuclear Safety Commission – Questions and Answers

1. Prior to reviewing the Canadian Nuclear Safety Commission's Oversight Report for Canadian Power Generating Stations, I felt that these nuclear facilities operated safely.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

If your answer is no, please explain

I feel that these report produced by the CNSC continue to demonstrate the transparency and the rigorous regulatory oversights of those nuclear facilities.

2. Were you aware that there is a federal regulator known as the Canadian Nuclear Safety Commission whose role is to provide oversight for all these nuclear facilities in Canada?

- Yes
- Not Sure
- No

3. My opinion changed after reading the report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Please explain how your opinion changed \_\_\_\_\_

\_\_\_\_\_

4. Following the review of the report, how confident are you that these nuclear facilities operate safely?

- Very Confident
- Confident
- Neutral
- Not very confident
- Not at all confident

5. After reviewing the report, my level of confidence on the safe operations of the plant

- Increased
- Stayed the same
- Decreased

6. After reviewing the report, my level of concerns

- Increased
- Stayed the same
- Decreased

Do not have concern – I rely on the CNSC to provide safety oversight of these facilities as they are the experts in the industry. The CNSC report provides the results of those inspections and the confidence of the CNSC to allow those plants to continue to operate.

7. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas concern you?

No Concern

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

8. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas increase your confidence ?

- 1. Conventional Health and Safety
- 2. Emergency Management and Fire Protection
- 3. Radiation Protection

9. Reading this report helps me understand how these nuclear stations are supervised for safety?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

**Comments** The report covers a large section of the operations with a high emphasis on Safety which is the mandate of the CNSC.

10. Do you find the Oversight Report easy to read and understand?

Some sections are easier to understand than other. However we have direct contact with the local plant which helps us understand any technical information that we have questions on.

11. Which of the following statements best represent how thoroughly you read the report?

- 1. I read most of it
- X I read part of it
- 2. I read a little of it
- 3. I read none of it

12. CNSC should promote the availability of this report.

- Strongly agree
- X Agree
- Neutral
- Disagree
- Strongly disagree

13. I could easily locate this report on the main CNSC website

- Strongly agree
- X Agree
- Neutral
- Disagree
- Strongly disagree

14. Which of the following statements best represent how thoroughly you read the report?

- I read most of it
- X I read part of it
- I read a little of it
- I read none of it

Additional Comments:

\_\_\_\_\_

Name (Optional): See Attachment

Representation/Status: Business Organization

\_\_\_\_\_

*This participant requested the attached submission be included in this questionnaire*

#2



## Presentation to the Nuclear Safety Commission

May 10, Saint John, NB

Good morning President Binder and members of the commission, my name is David Duplisea and I am the CEO of the Saint John Region Chamber of Commerce.

I would like to begin by thanking the commission for allowing the Chamber of Commerce and our membership to speak at this important hearing.

I also would like to thank all of the people and organizations who have given their time and efforts in order to participate and share their views.

We are confident in this commission, and the process in place to consider all points of view to arrive at a final recommendation.

We are the Saint John Region Chamber of Commerce and we have been advocating on behalf of our members since

# 23



1819 and are one the first business associations or Chambers of Commerce in the whole country.

We were created through the merger of 4 chambers of commerce and business associations and represent close to 800 companies representing upwards of 35,000 employees.

Our membership is 85 % small to medium sized business and through surveys, they have indicated that advocacy on their behalf is the top reason for membership.

The sources for our data and economic analysis for this presentation are, the New Brunswick Building Trades Unions, Statistics Canada, and The International Brotherhood of Electrical Workers.

Although I will speak primarily on the economic impacts of the Point Lepreau Nuclear Generating Station on our community and our region, I would like to start by



recognizing the importance that the public and the business community places on the ongoing safe operation of the power plant. Nuclear safety is paramount.

Assessments by NBPower continue to demonstrate that the plant has sufficient barriers and processes in place to protect the public and the environment, as well as the workers at the plant itself.

Periodic evaluations identify opportunities for enhancements and improvements and continue to conclude that a strong nuclear safety culture exists at the station.

Conventional safety performance remains strong; recent achievements include 6 million person-hours without a lost time accident, with continuing focus on improving safety.

In addition, the total radiation dose to the public over the 30 years of operations is less than half of a single chest xray and amounts to less than 1% of the regulatory limits.



Hand in hand with safety of the public and the workers, is safety for the environment.

The station's environmental record and performance has been reviewed numerous times, either through environmental assessments or ecological and health risk assessments.

All of these reviews concluded that the station has minimal impact.

NB Power and the Point Lepreau facility are an integral part of our community and our economic landscape.

Approximately 800 employees work on the site full time. These are highly technical and well-paying jobs, many of them are in high demand in the industry and attract workers and their families to our region.



These jobs include power engineers, industrial mechanics, technicians such as electrical control, chemical and mechanical, professional engineers, administration staff, emergency response teams such as industrial fire brigade, emergency and medical services.

The annual salary for direct jobs is equal to 100 million dollars.

Using statistics Canada data, we can estimate that the indirect and induced job effects are associated with more than 200 industries in New Brunswick.

The in province jobs multiplier for this industry is 2.12, which means that for every direct job supported by the industry there is another 1.12 jobs associated with it indirectly through the supply chain and induced effects, (which is the labour income spent throughout the economy).

Using this methodology we can estimate that approximately 1,700 jobs are supported across New



Brunswick by Point Lepreau, many in the Saint John region.

During planned maintenance outages, over 600 contractors join the Point Lepreau team, various trades including boilermakers, pipefitters, labourers and electricians work for an average of 10 weeks. This valuable employment keeps our trades employed locally and presents an opportunity for apprentices to continue their training.

If Point Lepreau closed and NB Power replaced it with another form of in province power generation, it is highly unlikely that the replacement would be anywhere near as job intensive, and therefore would have less economic activity.

The economic health of our region and our province has been identified as the top issue for our membership



Our membership is supportive because they recognize and understand the benefits that come to our region because of Point Lepreau

In a region hard hit by unemployment and large portion of our workforce forced to travel to other provinces for work, the PLNGS has a tremendous effect on employment in our region.

Our NB building trades unions represent 18 local unions with 8700 members province wide, that includes approximately 7000 journey person and 1700 apprentices.

This economic activity contributes to government tax revenues which support our social programs and safety net upon which we have come to rely.

I thank the commission for the opportunity to speak to you today.

Answers recorded by Gordon DANZELL  
by phone for community members living  
near Pickering Site/ON

### Canadian Nuclear Safety Commission – Questions and Answers

1. Prior to reviewing the Canadian Nuclear Safety Commission's Oversight Report for Canadian Power Generating Stations, I felt that that these nuclear facilities operated safely.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

If your answer is no, please explain \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Were you aware that there is a federal regulator known as the Canadian Nuclear Safety Commission whose role is to provide oversight for all these nuclear facilities in Canada?

- Yes
- Not Sure
- No

3. My opinion changed after reading the report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Please explain how your opinion changed \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Following the review of the report, how confident are you that these nuclear facilities operate safely?

- Very Confident
- Confident
- Neutral
- Not very confident
- Not at all confident

5. After reviewing the report, my level of confidence on the safe operations of the plant

- Increased
- Stayed the same
- Decreased

6. After reviewing the report, my level of concerns

- Increased
- Stayed the same
- Decreased

7. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas concern you?

- 1. Safety analysis
- 2. Radiation Protection
- 3. Emergency Management / Fire Protection

8. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas increase your confidence ?

- 1. Safety analysis
- 2. Radiation Protection
- 3. Emergency Management / Fire Protection

9. Reading this report helps me understand how these nuclear stations are supervised for safety?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Comments \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10. Do you find the Oversight Report easy to read and understand?

No

11. Which of the following statements best represent how thoroughly you read the report?

- 1. I read most of it
- 2. I read part of it
- 3. I read a little of it
- 4. I read none of it

12. CNSC should promote the availability of this report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

PICKERING CHAPTER

Not readable if it was written for public consumption it could be made more available

13. I could easily locate this report on the main CNSC website

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

14. Which of the following statements best represent how thoroughly you read the report?

- I read most of it
- I read part of it
- I read a little of it
- I read none of it

Pickering Chapter

Additional Comments:

AS PROVIDED BY PHONE INTERVIEW

"Not written for public consumption"

Name (Optional):

COMMUNITY MEMBER LIVING IN VICINITY

Representation/Status:

OF PICKERING FACILITY

### Canadian Nuclear Safety Commission – Questions and Answers

1. Prior to reviewing the Canadian Nuclear Safety Commission’s Oversight Report for Canadian Power Generating Stations, I felt that that these nuclear facilities operated safely.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

If your answer is no, please explain \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Were you aware that there is a federal regulator known as the Canadian Nuclear Safety Commission whose role is to provide oversight for all these nuclear facilities in Canada?

- Yes
- Not Sure
- No

3. My opinion changed after reading the report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Please explain how your opinion changed \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. Following the review of the report, how confident are you that these nuclear facilities operate safely?

- Very Confident
- Confident
- Neutral
- Not very confident
- Not at all confident

5. After reviewing the report, my level of confidence on the safe operations of the plant

- Increased
- Stayed the same
- Decreased

6. After reviewing the report, my level of concerns

- Increased
- Stayed the same
- Decreased

7. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas concern you?

1. Waste Management
2. Environment Protection
3. Radioactive Protection

8. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas increase your confidence?

1. Waste Management
2. Environment Protection
3. Radioactive Protection

9. Reading this report helps me understand how these nuclear stations are supervised for safety?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Comments \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10. Do you find the Oversight Report easy to read and understand?

NO -

11. Which of the following statements best represent how thoroughly you read the report?

- 1. I read most of it
- 2. I read part of it
- 3. I read a little of it
- 4. I read none of it

12. CNSC should promote the availability of this report.

Improve The Communication of Facts,

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

13. I could easily locate this report on the main CNSC website

Didn't look for it

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

14. Which of the following statements best represent how thoroughly you read the report?

- I read most of it
- I read part of it
- 3. I read a little of it
- I read none of it

Additional Comments:

Name (Optional):

Representation/Status:

SAINT JOHN, NB - COMMUNITY MEMBER  
(RETIRED SOCIAL WORKER)

## Canadian Nuclear Safety Commission – Questions and Answers

1. Prior to reviewing the Canadian Nuclear Safety Commission's Oversight Report for Canadian Power Generating Stations, I felt that that these nuclear facilities operated safely.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

If your answer is no, please explain \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Were you aware that there is a federal regulator known as the Canadian Nuclear Safety Commission whose role is to provide oversight for all these nuclear facilities in Canada?

- Yes
- Not Sure
- No

3. My opinion changed after reading the report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Please explain how your opinion changed I was very impressed with the ratings and would strongly agree (rather than "agree" that the facilities operated safely.

4. Following the review of the report, how confident are you that these nuclear facilities operate safely?

- Very Confident
- Confident
- Neutral
- Not very confident
- Not at all confident

5. After reviewing the report, my level of confidence on the safe operations of the plant

- Increased
- Stayed the same
- Decreased

6. After reviewing the report, my level of concerns

- Increased
- Stayed the same
- Decreased

7. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas concern you?

1. Fitness for service
2. Radiation protection
3. Waste Management

8. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas increase your confidence ?

1. Operating Performance
2. Safety Analysis
3. Fitness For Service

9. Reading this report helps me understands how these nuclear stations are supervised for safety?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Comments Very good oversight for protection  
of the plant staff + surrounding community.  
Particularly the use of comparison graphs!

10. Do you find the Oversight Report easy to read and understand?

Hard to follow in the beginning but increasingly informative and eye opening as I continued to read.

11. Which of the following statements best represent how thoroughly you read the report?

- 1. I read most of it - except the trunch
- 2. I read part of it
- 3. I read a little of it
- 4. I read none of it

12. CNSC should promote the availability of this report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

13. I could easily locate this report on the main CNSC website

- Strongly agree *I was given the url*
- Agree
- Neutral
- Disagree
- Strongly disagree

14. Which of the following statements best represent how thoroughly you read the report?

- I read most of it
- I read part of it
- I read a little of it
- I read none of it

Additional Comments:

I tended to rely on the graphs a great deal  
Will continue to be more aware of how the system  
and CNSC keep us safe

Name (Optional):



Representation/Status:

## Canadian Nuclear Safety Commission – Questions and Answers

1. Prior to reviewing the Canadian Nuclear Safety Commission's Oversight Report for Canadian Power Generating Stations, I felt that that these nuclear facilities operated safely.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

If your answer is no, please explain \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Were you aware that there is a federal regulator known as the Canadian Nuclear Safety Commission whose role is to provide oversight for all these nuclear facilities in Canada?

- Yes
- Not Sure
- No

3. My opinion changed after reading the report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Please explain how your opinion changed

*Because of the science base assessments with a Federal legislative mandate as well as a detailed reading of this report my opinion changed to strongly agree.*

4. Following the review of the report, how confident are you that these nuclear facilities operate safely?

- Very Confident
- Confident
- Neutral
- Not very confident
- Not at all confident

5. After reviewing the report, my level of confidence on the safe operations of the plant

- Increased
- Stayed the same
- Decreased

6. After reviewing the report, my level of concerns

- Increased
- Stayed the same
- Decreased

7. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas concern you?

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

8. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas increase your confidence ?

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

9. Reading this report helps me understands how these nuclear stations are supervised for safety?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Comments \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10. Do you find the Oversight Report easy to read and understand? *No*

*It was not easy to read and some sections were hard to understand as material often technical. Executive Summary needs to be expanded and easier to read. More user friendly.*

11. Which of the following statements best represent how thoroughly you read the report?

- 1. I read most of it
- 2. I read part of it
- 3. I read a little of it
- 4. I read none of it

*I provided commentary on all of it to be submitted to CNSC*

12. CNSC should promote the availability of this report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

13. I could easily locate this report on the main CNSC website

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

14. Which of the following statements best represent how thoroughly you read the report?

- I read most of it
- I read part of it
- I read a little of it
- I read none of it

Additional Comments:

*I read all of it carefully. It was tough going.*

Name (Optional): 

Representation/Status: *SAINT JOHN, N.B.* 

### Canadian Nuclear Safety Commission – Questions and Answers

1. Prior to reviewing the Canadian Nuclear Safety Commission’s Oversight Report for Canadian Power Generating Stations, I felt that that these nuclear facilities operated safely.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

If your answer is no, please explain \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Were you aware that there is a federal regulator known as the Canadian Nuclear Safety Commission whose role is to provide oversight for all these nuclear facilities in Canada?

- Yes
- Not Sure
- No

3. My opinion changed after reading the report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Please explain how your opinion changed \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. Following the review of the report, how confident are you that these nuclear facilities operate safely?

- Very Confident
- Confident
- Neutral
- Not very confident
- Not at all confident

5. After reviewing the report, my level of confidence on the safe operations of the plant

- Increased
- Stayed the same
- Decreased

6. After reviewing the report, my level of concerns

- Increased
- Stayed the same
- Decreased

7. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas concern you?

- 1. NONE
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

8. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas increase your confidence ?

- 1. SAFETY ANALYSIS
- 2. MANAGEMENT SYSTEM
- 3. ENVIRONMENTAL PROTECTION

9. Reading this report helps me understands how these nuclear stations are supervised for safety?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. Do you find the Oversight Report easy to read and understand?

YES  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. Which of the following statements best represent how thoroughly you read the report?

- 1. I read most of it
- 2. I read part of it
- 3. I read a little of it
- 4. I read none of it

12. CNSC should promote the availability of this report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

13. I could easily locate this report on the main CNSC website

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

14. Which of the following statements best represent how thoroughly you read the report?

- I read most of it
- I read part of it
- I read a little of it
- I read none of it

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_

Name (Optional):



Representation/Status: LOCAL AREA FISHING INDUSTRY

## Canadian Nuclear Safety Commission – Questions and Answers

1. Prior to reviewing the Canadian Nuclear Safety Commission's Oversight Report for Canadian Power Generating Stations, I felt that that these nuclear facilities operated safely.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

If your answer is no, please explain \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Were you aware that there is a federal regulator known as the Canadian Nuclear Safety Commission whose role is to provide oversight for all these nuclear facilities in Canada?

- Yes
- Not Sure
- No

3. My opinion changed after reading the report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Please explain how your opinion changed \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Following the review of the report, how confident are you that these nuclear facilities operate safely?

- Very Confident
- Confident
- Neutral
- Not very confident
- Not at all confident

5. After reviewing the report, my level of confidence on the safe operations of the plant

- Increased
- Stayed the same
- Decreased

6. After reviewing the report, my level of concerns

- Increased
- Stayed the same
- Decreased

7. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas concern you?

- 1. None
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

8. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas increase your confidence ?

- 1. None
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

9. Reading this report helps me understand how these nuclear stations are supervised for safety?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Comments Excessive use of Acronyms

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#8

10. Do you find the Oversight Report easy to read and understand?

See #9. excessive use of acronyms, and a concise Executive summary was supplied, but Bold or highlighting the key passage would be an improvement

11. Which of the following statements best represent how thoroughly you read the report?

- 1. I read most of it
- 2. I read part of it - that pertained to Pt. Lepreau
- 3. I read a little of it
- 4. I read none of it

12. CNSC should promote the availability of this report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

13. I could easily locate this report on the main CNSC website

- Strongly agree
  - Agree
  - Neutral
  - Disagree
  - Strongly disagree
- } didn't try.

14. Which of the following statements best represent how thoroughly you read the report?

- I read most of it
- I read part of it - see #11 above that pertained to PLNGS.
- I read a little of it
- I read none of it

Additional Comments:

Thank you Gordon for taking the time/interest.

Name (Optional): [Redacted]

Representation/Status: [Redacted]

## Canadian Nuclear Safety Commission – Questions and Answers

1. Prior to reviewing the Canadian Nuclear Safety Commission's Oversight Report for Canadian Power Generating Stations, I felt that that these nuclear facilities operated safely.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

If your answer is no, please explain \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Were you aware that there is a federal regulator known as the Canadian Nuclear Safety Commission whose role is to provide oversight for all these nuclear facilities in Canada?

- Yes
- Not Sure
- No

3. My opinion changed after reading the report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Please explain how your opinion changed \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Following the review of the report, how confident are you that these nuclear facilities operate safely?

- Very Confident
- Confident
- Neutral
- Not very confident
- Not at all confident

5. After reviewing the report, my level of confidence on the safe operations of the plant

- Increased
- Stayed the same
- Decreased

6. After reviewing the report, my level of concerns

- Increased
- Stayed the same
- Decreased

7. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas concern you?

1. only read Pt Lepreau Section
2. \_\_\_\_\_
3. \_\_\_\_\_

8. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas increase your confidence ?

1. only read Pt Lepreau Section
2. \_\_\_\_\_
3. \_\_\_\_\_

9. Reading this report helps me understand how these nuclear stations are supervised for safety?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Comments too many acronyms for someone who knows  
nothing about nuclear, write with less technical  
terms

10. Do you find the Oversight Report easy to read and understand?

hard to understand, not enough detail when things are non-compliance - should explain how in more detail, no acronyms

11. Which of the following statements best represent how thoroughly you read the report?

- 1. I read most of it
- 2. I read part of it
- 3. I read a little of it
- 4. I read none of it

12. CNSC should promote the availability of this report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

13. I could easily locate this report on the main CNSC website

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

14. Which of the following statements best represent how thoroughly you read the report?

- I read most of it
- I read part of it
- I read a little of it
- I read none of it

Additional Comments:

only Pt Lepreau section

Name (Optional): 

Representation/Status: \_\_\_\_\_

## Canadian Nuclear Safety Commission – Questions and Answers

1. Prior to reviewing the Canadian Nuclear Safety Commission's Oversight Report for Canadian Power Generating Stations, I felt that that these nuclear facilities operated safely.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

If your answer is no, please explain \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Were you aware that there is a federal regulator known as the Canadian Nuclear Safety Commission whose role is to provide oversight for all these nuclear facilities in Canada?

- Yes
- Not Sure
- No

3. My opinion changed after reading the report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Please explain how your opinion changed \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Following the review of the report, how confident are you that these nuclear facilities operate safely?

- Very Confident
- Confident
- Neutral
- Not very confident
- Not at all confident

*NO RESPONSES SUBMITTED*

*Participant accepted to review the report  
but circumstances prevented him from  
completing the questionnaire.*

#10

5. After reviewing the report, my level of confidence on the safe operations of the plant

- Increased
- Stayed the same
- Decreased

6. After reviewing the report, my level of concerns

- Increased
- Stayed the same
- Decreased

7. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas concern you?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

8. On page 8 of the report, the CNSC identifies the performance rating for the safety and control areas; which top three safety and control areas increase your confidence ?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

9. Reading this report helps me understand how these nuclear stations are supervised for safety?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#10

10. Do you find the Oversight Report easy to read and understand?

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11. Which of the following statements best represent how thoroughly you read the report?

- 1. I read most of it
- 2. I read part of it
- 3. I read a little of it
- 4. I read none of it

12. CNSC should promote the availability of this report.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

13. I could easily locate this report on the main CNSC website

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

14. Which of the following statements best represent how thoroughly you read the report?

- I read most of it
- I read part of it
- I read a little of it
- I read none of it

Additional Comments:

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Name (Optional): \_\_\_\_\_

Representation/Status: \_\_\_\_\_

RETURNED NOT COMPLETED