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## **Update from CNSC Staff**

## **Mise à jour du personnel de la CCSN**

### **Follow up from May 30, 2018 Public Hearing Part-2 on Bruce Power Licence Renewal**

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### **Suivi sur un sujet découlant de la partie-2 de l'audience publique du 30 mai 2018 pour le renouvellement du permis de Bruce Power**

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Clarification from CNSC staff on the response to the question on elevation of diesel generator

Précisions du personnel de la CCSN sur la réponse à une question sur l'élévation des génératrices diesel

Commission Meeting

Réunion de la Commission

December 12, 2019

Le 12 décembre 2019

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To  
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From  
De Luc Sigouin  
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Your File – Votre référence	
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**Subject Clarification of CNSC Staff Response to Question from May 30, 2018 Bruce Part 2 Hearing on Elevation of Diesel Generators**

At the May 30, 2018 Bruce Power licence renewal hearing, in an answer to a question from President Binder, President of the Commission at that time, regarding the elevation of diesel generators relative to the waterline, CNSC staff provided an incorrect approximation of their elevation above the lake (40-50 feet) [1, p. 255]. The portion of the transcript pertaining to this question and response can be found below in Appendix A. The purpose of this memo is to correct the CNSC staff statement and clarify for Commission members the issue of the elevation of generators at Bruce A and B relative to the waterline.

An intervenor had stated at the May 30, 2018 hearing that the diesel generators are below the water level for Canadian reactors. The President of the Commission asked whether this statement was true. A Bruce Power representative responded that the generators are not below the waterline for Bruce A and B. CNSC staff added to the discussion that the elevation of generators for reactors at Bruce A and B is about 40-50 feet above the waterline (12-15 m). This approximation was incorrect - the actual elevation of all Bruce A and B back-up generators is approximately 3.8 metres above the waterline. It should be pointed out that the Bruce Power response provided the information that the President requested, that is, the generators are located above the waterline. This is the pertinent part of the response.

It is important to note that the CNSC staff assessments and the recommendations presented in CMDs 18-H4 and 18-H4.B for the Bruce licence renewal hearing in 2018 were based on the actual 3.8 m elevation. Specifically, flooding has been extensively studied at all nuclear power plant sites, including Bruce A and B. These analyses were for two types of probable flooding scenarios for the Bruce site: extreme precipitation, and lake storm surge with wind driven wave action. The results demonstrate that even in the worst flooding event considered, Class III power provided by the back-up generators will remain available at both Bruce A and B. In addition, in response to the Fukushima event in 2011, additional emergency mitigating equipment, in the form of portable generators, are available and stored at a remote location to provide an additional line of defence. Given that the analyses and aforementioned CMDs were based on actual elevation of the back-up generators, this memo correcting the response given at the hearing does not change CNSC staff recommendations.



**Attachment:** Appendix A: Portion of the Transcript of Bruce Power Public Hearing Part 2, May 30, 2018

**Reference:** [1] CNSC document, Transcript of Bruce Power Public Hearing Part 2, May 30, 2018, e-Doc 5565587.



**Appendix A: Portion of the Transcript of Bruce Power Public Hearing Part 2, May 30, 2018**

**Note:** Extracted from pp.252-255 of the Transcript.

**MEMBER PENNEY:** Consulting engineers, all those parties, yes. So the things that you've said are very serious, and we will take them seriously.

**DR. NIJHAWAN:** My hope is that you will actually read my submission. You read that and you will see that there are serious concerns which have been neglected. Very simply put, very simple to understand, deuterium or hydrogen production in a reactor is a natural consequence of fuel heat-up. It will occur from fuel as well as from feeders. This industry has refused to put in methods of removing that hydrogen effectively and safely. There are so many other places where industry has -- feel of being -- doing something, but actually not doing something.

By the way, about CSA Standards, the rule-making process and enforcement process are not separate in this country, they are together. CSA Standards are set-up by the industry itself. It is the people within the industry who typically set-up the standards. Some others, there's a little conflict of interest we can talk about further itself.

But the process which was undertaken by CNSC after Fukushima was to create a process of making plans to do things, but actually not much got done. Not much got done. We still have our diesel generators below the water level in our reactors. They're still there where they were before. If there's a matter by which the water from our lakes can get into the station, they will still do the same thing, which happened in Fukushima.

We haven't raised them up, we haven't put them on any hill. We still have not changed things which can easily be changed because this is our safety culture now.

**THE PRESIDENT:** Is that true?

**DR. NIJHAWAN:** This is the safety culture which was -- just one second --

**THE PRESIDENT:** No, wait a second. You raise an issue, I would like an answer. Is that -- because our real concern, if it's under water, I really would like -- water level, I want to know about that. Is that true? Bruce?

**MR. NEWMAN:** For the record, Gary Newman. Our stand-by generators, emergency-power generators, are not below the waterline.

**DR. NIJHAWAN:** Not the stand-by, the real ones. The back-up ones are under water where they were years ago. The stand-by ones are on trucks.

**MR. NEWMAN:** That was the case in Fukushima, but that is not the case at the domestic CANDUs. I go out and look at them all the time.

**MR. JAMMAL:** We have our inspectors here, Mr. President, so they can tell you where the location is of the original and the stand-by.

**MR. STEVENSON:** Jeff Stevenson, CNSC Site Inspector, for the record. We do inspections on a regular basis of all the various equipment in the plant, so we're very familiar with where the various stand-by generators are located.

They are located in different -- at Bruce A they're located on the west end of the station, at Bruce B there's a couple located on the east end and a couple located on the west end. In both cases, they're about 40 or 50 feet above the waterline.



**Presentation by Bruce Power**

**To respond to questions from Commission Members  
on CMD 19-M49 (from CNSC Staff)**

**December 12, 2019 Commission Meeting**

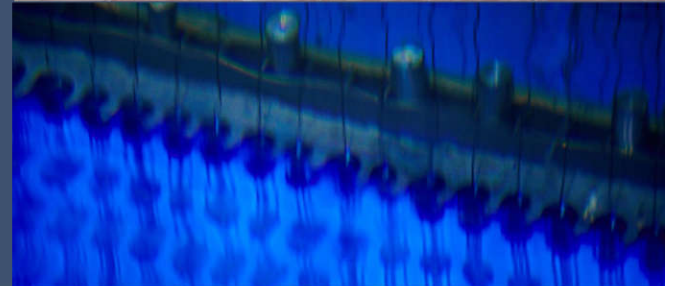
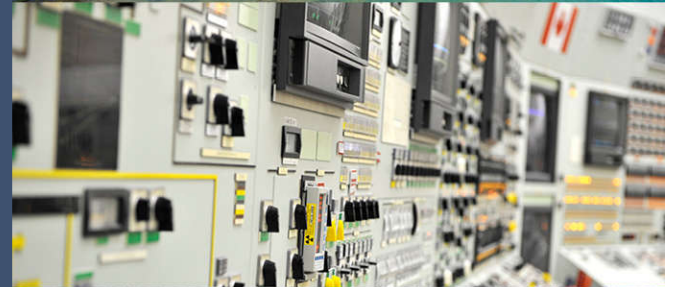




December 12, 2019

# Standby Power Generators at Bruce Power

CNSC Commission Meeting

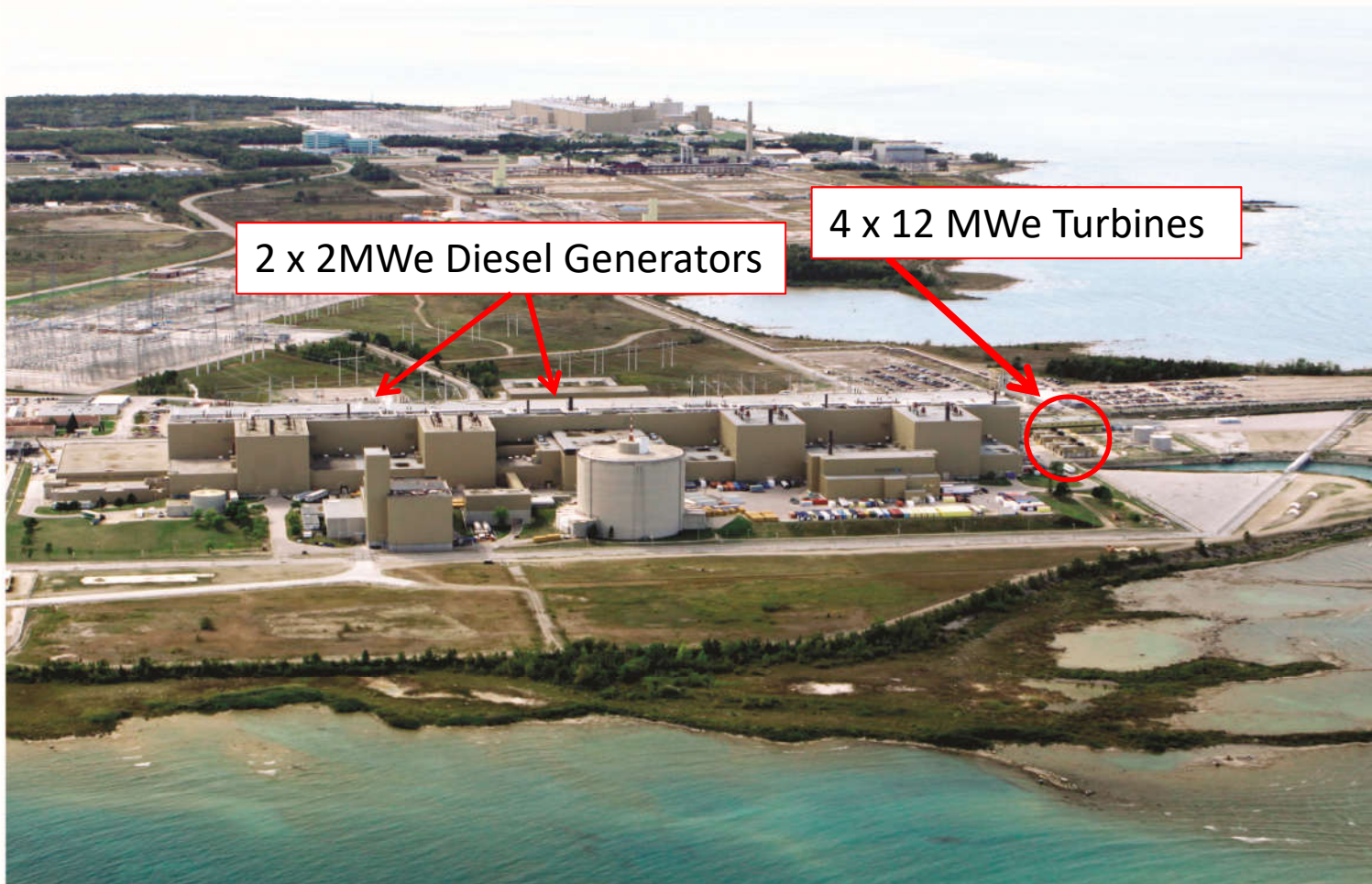


# General Information

- Current water level in Lake Huron is ~177.26m\* (above sea level)
- Historical levels vary between 177.50m and 175.78m, the datum for the lake is 176.00m
- Bruce Power Standby and Emergency Power Generators are located at 180.14m

- \*Source: <https://waterlevels.gc.ca/C&A/bulletin-eng.html>

# Bruce A SG and SDG Locations





# Bruce B SG and EPG Locations

