

*The Canadian Coalition for Nuclear Responsibility*

presents

**A Brief Critique**

**of the**

**CNSC Technical Briefing  
On Steam Generators**

[http://nuclearsafety.gc.ca/eng/pdfs/Presentations/CNSC\\_Staff/2011/February-11-2011-Staff-Technical-Briefing-Safe-Transport-of-Steam-Generators\\_e.pdf](http://nuclearsafety.gc.ca/eng/pdfs/Presentations/CNSC_Staff/2011/February-11-2011-Staff-Technical-Briefing-Safe-Transport-of-Steam-Generators_e.pdf)

Provided to journalists and members of Parliament  
as well as  
Members of the Standing Committee on Natural Resources

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## **A Brief Critique of CNSC’s “Technical Briefing” on Steam Generators t**

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The Technical Briefing provided by the CNSC staff to the Standing Committee on Natural Resources, in our opinion, displayed a shocking lack of objectivity.

By selectively omitting a number of important facts and distorting other facts, CNSC staff gave an inappropriate presentation that was promotional and somewhat deceptive. We begin with some of the most important omissions.

### **The CNSC briefing made no mention of *ANY* of these facts:**

- (1) no mention that the **total amount of radioactivity in this shipment exceeds the maximum amount normally allowed** on a single vessel by a large margin;
- (2) no mention of plutonium, or the fact that **about 90 percent of the mass of radioactive material inside the steam generators is plutonium**, a man-made radioactive element well-known for its radiotoxicity and longevity;
- (3) no mention that the **plutonium inside corroded pipes can be released as a fine dust**, as shown by the fact that hundreds of workers involved in the Bruce Power refurbishment have inhaled such dust;
- (4) no mention that Bruce Power declared, in a 2006 EA, that the **steam generators would be stored on-site in a surface facility until 2043 and underground thereafter**, and would not be transported on public roads;
- (5) no mention that **CNSC staff formally approved the permanent on-site storage of steam generators** as proposed by Bruce Power in its 2006 EA;
- (6) no mention that **plans for on-site storage were the subject of contractual agreements** signed between Bruce Power and OPG, the owner of the Bruce reactors and ultimate owner of all radwaste produced by those reactors;
- (7) no mention that both Bruce Power and CNSC staff declared unequivocally, during the 2006 Environmental Assessment, that the **steam generators were to be classified as radioactive waste and therefore could not be recycled**;
- (8) no mention that **there is no market for recycled radioactive metal** – that only by blending contaminated metal with much non-contaminated metal is it possible to fool consumers into believing that there is no contamination;
- (9) no mention that **agencies independent of the nuclear industry have deplored the contamination of the world’s scrap metal supply** with radioactive wastes.

## Here are some distortions of fact from the CNSC presentation:

(1) *The CNSC briefing states that over 50,000 shipments of medical isotopes take place every year – and somehow concludes from this that the shipment of the steam generators is routine and sets no precedent,*

**HOWEVER**

- there is a huge difference between radioactive goods and radioactive garbage, as there is between chemical products and chemical wastes;
- this would be the first ever shipment of radioactive garbage from a decrepit nuclear reactor through the Great Lakes and St. Lawrence, and it would set a precedent for many more such shipments to come;
- medical isotopes typically have a short hazardous lifetime, measured in hours or days or weeks, whereas the plutonium in the steam generators poses hazards for tens of thousands of years if spilled;

(2) *The CNSC briefing states that there are less than 4 grams of radioactive materials in each steam generator*

**HOWEVER**

- reporting radioactivity in “grams” is unscientific and generally misleading, as the only proper unit of radioactivity is the Becquerel;
- the radioactivity inside the steam generators, about 4 million million becquerels, is over 60 times greater than the maximum amount of radioactivity normally allowed for transport on lakes and rivers;
- the total amount of radioactivity inside the steam generators is more than 6 times greater than the maximum amount of radioactivity normally allowed for ocean transport;

(3) *The CNSC briefing states that the radiation exposure from one steam generator (of 0.08 millisieverts per hour) makes it “safe to be around”*

**HOWEVER**

- the maximum *ANNUAL* radiation dose limit for members of the public (1 mSv) would be exceeded by almost a factor of two in *JUST ONE DAY* spent beside a steam generator, since  $0.08 \times 24 = 1.92$  ;
- proximity to one steam generator for a period of a year would result in a radiation dose more than 700 times greater than the annual dose limit;
- the CNSC has a legal responsibility “to disseminate objective technical and scientific information”, yet the information presented here is neither objective nor scientifically accurate ;

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(4) *The CNSC briefing states that the quantity of radioactivity in one steam generator is less than the radioactivity of a cardiac pacemaker*

<sup>(4)</sup>  
**HOWEVER**

- <sup>(5)</sup> • today’s cardiac pacemakers are not radioactive at all – nuclear pacemakers were phased out 25 years ago as a dangerous technology;
- only a handful of very old patients still have nuclear pacemakers, and chest surgery is needed to remove the pacemaker when they die so the nuclear material can be sent to a radioactive waste management facility at Los Alamos, New Mexico;
- the amount of radioactive material in one steam generator is in fact substantially greater than the radioactivity in a nuclear pacemaker, whether it is measured in becquerels or in grams;

(5) *The CNSC briefing states that the maximum radiation dose to a member of the public following a worst-case accident would be less than one percent of the annual dose limit for a member of the public,*

<sup>(6)</sup>  
**HOWEVER**

- <sup>(7)</sup> • independent analysis shows that a true worst-case accident involving only one steam generator in Owen Sound harbour would exceed the Health Canada Drinking Water Action Levels;
- independent analysis shows that an accident involving only one steam generator in a ship lock has the potential to exceed the Health Canada Drinking Water Action Levels under several accident scenarios;
- independent analysis shows that such an accident involving four steam generators has the potential to exceed the Health Canada Drinking Water Action Levels even under restricted release assumptions;

(6) *The CNSC staff briefing states that the proposed shipment would result in 90 percent of the “clean metal” being recycled, and that such an operation is “good for the environment”,*

<sup>(8)</sup>  
**HOWEVER**

- <sup>(9)</sup> • as CNSC correctly states in its own document (CMD10-H19), the Swedish facility owned by Studsvik “specializes in recycling of contaminated metal” – it has nothing to do with recycling “clean metal” ;
- at the CNSC public hearing in September, a spokesperson from Studsvik described how the contaminated metal from the steam generators is mixed with uncontaminated metal in the ratio 1 to 10;
- the Steel Manufacturer’s Association has declared its absolute opposition to the practice of mixing radioactively contaminated metal from nuclear facilities with uncontaminated scrap metal.