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

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

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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

[2]

- 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

[3]

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"

[4]

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 **x** 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 ;

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

(4)

HOWEVER

(5)

- 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 Loa 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,

(6)

HOWEVER

(7)

- 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",

(8)

HOWEVER

(9)

- 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.