

# *Nuclear Free Local Authorities* **briefing**



**Date:** 26<sup>th</sup> July 2011

**No.85**

**Subject:** **Radioactive waste shipments from Canada to Sweden – concerns for UK and Irish local authorities**

## **1. Background to briefing**

This briefing has been developed by the NFLA Secretary for NFLA members and for members of KIMO International, as part of the Memorandum of Understanding between the two organisations. It will be of interest to Councils and environmental groups.

The briefing arises following the NFLA being alerted by Canadian and American NGOs (non-governmental organisations) that the Canadian nuclear power company, Bruce Power, has sought permission, and been given approval, to move large quantities of radioactively contaminated steam generators from a site near the Great Lakes in Canada across to the Studsvik facility in Sweden for clean-up, recycling and partial return.

The issues around these shipments are a matter of concern for a large number of municipalities and nuclear concerned groups in Canada, the United States, the British Isles and Scandinavia. The NFLA has co-operated closely with KIMO International and two Canadian NGOs in particular – the Canadian Coalition for Nuclear Responsibility (CCNR) and the Council of Canadians. The NFLA Secretary would like to express his thanks to Gordon Edwards from the CCNR, Emma Lui from the Council of Canadians, and John Mouat from KIMO International, in the production of this briefing.

## **2. Bruce Power and the proposed shipments**

Bruce Power is Canada's first private nuclear operator. It runs two generating stations on a 2,300 acre site, which each hold four CANDU nuclear reactors. It is located on the shores of Lake Huron near the Canadian / United States border. Its reactors generate 4,700 megawatts of electricity to the Province of Ontario. Bruce Power is a partnership company involving Cameco Corporation, TransCanada Corporation, Borealis Infrastructure (a trust established by the Ontario Municipal Employees Retirement Fund), the Power Workers Union and the Society of Energy Professionals (1).

As part of the decommissioning process of redundant equipment, 16 (and eventually 32) bus-sized steam generators need to be removed. In 2010, as part of the decommissioning process, Bruce Power put a tender out for radioactive clean-up of the generators, which the Swedish company Studsvik won. A formal request for permission to transport the steam generators from the Lake Huron facility at Owen Sound to Nyköping, Sweden was also put to the Canadian Nuclear Safety Commission (CNSC) on April 1<sup>st</sup>, 2010 (2).

## **THE LOCAL GOVERNMENT VOICE ON NUCLEAR ISSUES**

Steam generators are used in most power plants as part of the mechanism to generate electricity. In nuclear power plants they become contaminated with radioactive pollutants during their service life, though the extent of contamination is usually low, and confined to the inner parts of the steam generator. On decommissioning of the reactors, the generators are welded shut and sealed (3). The Bruce Power application to CNSC proposes that the first 16 steam generators are transported to Sweden, where around 90% of the less contaminated metallic portions will be melted down and blended with non-contaminated metal in a one-to-ten ratio, then sold on the open market as scrap metal for unrestricted use. The remaining material will then be transported back to Canada to a Bruce Power facility for low level waste storage (4). Further shipments of the remaining 16 generators will then follow in the same manner.

In February 2011, following consideration of the Bruce Power request and its transportation and environmental reports, the CNSC gave its approval to the transport. It was believed that the shipments would begin in April / May 2011, but they have been delayed following a decision by Bruce Power to further consult with First Nation communities in Canada (5).

Bruce Power's transportation plan is a five step process (6):

- Road transportation of each steam generator from its Lake Huron facility to the Public Port of Owen Sound.
- Loading on to a specially adapted ship, taking around 3 to 4 weeks.
- Once all 16 steam generators are loaded, they will then travel the Canadian Great Lakes, the St Lawrence Seaway and the St Lawrence River (passing through United States territorial waters) to the Atlantic Ocean.
- They will pass through UK, Norwegian and Danish territorial waters before arriving at the Studsvik harbour in Nyköping, Sweden. They will then be offloaded and transported to Studsvik's recycling facility for processing.
- The 10% of the steam generator that cannot be recycled will be returned to Canada, through Halifax Harbour in Nova Scotia and the road network to Bruce Power's Lake Huron facility, as low level radioactive waste.

The map below, taken directly from Bruce Power's website, outlines the likely outward route:



**Bruce Power map of proposed shipment journey from Canada to Sweden and the road transport to the Public Port of Owen Sound. Source: Bruce Power – <http://rightthingtodo.ca/transportation.php>**

Of interest to UK local authorities, the proposed route will travel close to the Orkney and Shetland Islands, and the north of Scotland, before moving into the North Sea.

Each generator is 11.7 metres by 2.5 metres and weighs around 100 tons. The below picture, taken directly from the Bruce Power website, gives an indication of the generators size (7):



It is planned that the cleaned-up metal will be sold on the open consumer market. It is also anticipated that this will not be the only shipments, as Bruce Power has 32 generators it wishes to ship to Sweden for recycling (8).

### 3. IAEA guidelines, the Canadian nuclear regulators response and public discontent

A key issue of concern to NGOs and Municipalities in Canada, which is shared by the NFLA, is that the proposed shipments will contain a total amount of radioactivity onboard that is **6 times** greater than the International Atomic Energy Authority (IAEA) limit for ocean transport, and **60 times** greater than the IAEA limit for transport through inland waterway, as outlined in the IAEA's *'Regulations for the Safe Transport of Radioactive Materials'*. It should also be noted that the CNSC recalculated the total amount of radioactivity after it was pointed out by respondents to its consultation that they had omitted to include one of the five isotopes of plutonium. With this recalculation, the limit for inland waterways is exceeded by 60 times (9).

The shipments also exceed the CSNC'S packaging requirements under its *Packaging and Transport of Nuclear Substances Regulations (PTNSR)*. Due to this, Bruce Power had to apply for a 'Special Arrangement' in the form of a licence from the CSNC allowing them to proceed with this shipment. This was granted in February 2011.

Canadian groups and municipalities are further concerned not just with the size of the shipments but also with the lack of accessibility to the interior of the generators to ascertain contamination levels. As the Council of Canadians have uncovered, quoting directly from a CNSC staff report (Document 10, H19, Page 7):

"Bruce Power has applied for a licence to transport under special arrangement for the transport of the steam generators because the size of the steam generators makes it impractical to package them, the interior cannot be accessed which does not allow direct confirmation of the estimated internal surface contamination levels, and the total activity in the shipment is estimated to exceed the limits of the regulations for Surface Contaminated Objects material transported onboard a single ship." (10)

A lively debate has been taking place between the CSNC and its critics over how many times the radioactive levels exceed IAEA guidelines. The CNSC has consistently affirmed that, though the radioactivity of the shipment exceeds IAEA guidelines by 6 times, it conforms to the limits of ocean-going shipments. However, as noted above, the Great Lakes and St. Lawrence Cities Initiatives (GLSLCI), a municipal organisation made up of Councils from Canada and the United States, has noted that radioactivity of a single ship exceeds IAEA guidelines for inland-water shipments (lakes and rivers) by 50 times (or "60 times with revised and increased

estimates of radioactivity"). As noted in the map above, the shipments will have to pass through such inland waterways before reaching the Atlantic Ocean.

The GLSLCI has noted that it is not clear whether the 10 A2 limit applies to inland waterway or inland watercraft. It should also be noted that the GLSLCI claim that an accident with only one generator in Owen Sound Harbour has the potential to exceed Health Canada's Drinking Water Action Levels by 6 times (if the release rate is 100 per cent). (11) 90% of the radioactive material in the steam generators is plutonium-239, which has a half-life of 24,100 years. Further detailed concerns on the shipments from the GLSLCI can be found at [http://www.glslicities.org/voice-of-mayors/Bruce\\_CSNC\\_NovcommentsFINAL.pdf](http://www.glslicities.org/voice-of-mayors/Bruce_CSNC_NovcommentsFINAL.pdf).

For many Canadian NGOs and municipalities, this shipment sets a dangerous precedent for shipping radioactive waste exceeding international standards across the Great Lakes and the open sea. Within Canada this precedent may influence decisions about highly radioactive waste currently stored on site at the Bruce, Pickering and Darlington nuclear power plants. Emma Lui also notes that Friends of the Earth Norway have commented that this shipment is setting a precedent for increasing radioactive metal shipments from Russia to the Ecomet-S site near St. Petersburg (12).

#### 4. **Response of Governments where the shipments pass through**

A robust debate has taken place in Canada and the United States over these proposed shipments and the parallel risks of cleaning out the radioactive materials to allow for recycling of the scrap metal. The Canadian Environmental Law Association and the Sierra Club Canada are seeking a judicial review of the CNSC decision. An attempt by the CNSC to raise a motion to intervene in the judicial review was rejected by the Canadian Federal courts in mid June. Most importantly within this decision, the Federal Court noted that the central issue in the application concerns the interpretation of the Canadian Environmental Assessment Act and whether an environmental assessment was required to be conducted before the CNSC could issue a license. The Court noted that the CNSC had addressed and thus already spoken to this issue in its decision. In the Court's conclusion, the Court was not satisfied that the intervention of the CNSC in the matter would be appropriate (13). The judicial review case is continuing.

The issue has been formally raised in the Canadian Parliament, led by the opposition New Democratic Party. It has also been formally discussed by the Environment Select Committee in the Danish Parliament, led by the Enhedslisten (Red-Green Alliance). The KIMO Sweden group is looking for the matter to be discussed in the Swedish Parliament and the NFLA plans to send this briefing to MPs and MSPs in the UK and Scottish Parliaments, and to TDs and Senators in the Republic of Ireland's Parliament, for discussion by relevant committees.

One of the most vociferous critics of the shipments have been local authorities and the indigenous First Nations communities and Bruce Power has delayed seeking an American movement licence in order to speak directly with both constituency.

At a meeting held in late June in Toronto, First Nation Chiefs from Ontario and Quebec raised their opposition to the shipments. The Union of Ontario Indians Grand Council Chief, Patrick Madahbee, said of the meeting: "Bruce Power was there doing a promotional job on their position in terms of safety. We indicated that they weren't going to be shipping these generators through our territory." (14)

This delay to discuss the matter with First Nations communities has meant that Bruce Power has also delayed its request for seeking permission to commence the shipments from American authorities, as it is required to do so. It is not clear when it will now seek to do this. It has the requisite approval from the Swedish Radiation Safety Authority, provided that the radioactive contents can be secured in the event of shipwreck. The Council of Canadians and KIMO Sweden have written to the Swedish Environment Minister Andreas Carlgren and are lobbying Swedish MPs to seek a review of this decision (15).

The Nuclear Free Local Authorities (NFLA) has written to the Scottish and the UK Governments to ascertain their view on the shipments as they travel through UK territorial waters. In an email to the NFLA on March 14<sup>th</sup> 2011, the Scottish Government confirmed that such matters were reserved by the UK Government. The email went on to note (16):

“The Scottish Government has been informed that the UK Department for Transport (DfT) has not yet received any formal notification regarding this proposed shipment, including whether it will travel through UK territorial or Scottish waters. However, we understand that there have been informal discussions between the respective national authorities and therefore The Scottish Government has been in contact with the DfT in order to seek assurance that this proposed shipment will comply with the appropriate international regulations. Officials have informed us that the Canadian Authorities have confirmed that the proposed shipment would meet these international regulations.”

The UK Department of Transport’s Principal Inspector, Criticality and Radiological Protection Branch, responded in an email to the NFLA on 16<sup>th</sup> May that (17):

- “There is no requirement to request permission from, or to notify the UK government of, shipments through UK territorial waters.
- We have not been in formal contact with the Canadian government over this matter
- The items being shipped are not entering the UK so no approvals are required. We understand that this shipment will be made under the Special Arrangement provision of the IAEA transport regulations. This provision permits the transport of radioactive material where full compliance with the regulations cannot be demonstrated provided that equivalent safety is ensured by other means. We cannot comment on the technical content of the safety justification for this Special Arrangement because no application for UK approval has been made. We note that it was approved by the Canadian Competent Authority for the transport of radioactive material following detailed scrutiny and will also be approved in Sweden.

The transport of radioactive materials is governed by strict, internationally-agreed standards set out by the International Atomic Energy Agency (IAEA). These regulations have been in place for 50 years and have ensured that such movements have maintained an excellent safety record. In addition, any radioactive material being transported by sea must be packaged and stowed in accordance with the International Maritime Dangerous Goods Code, and these shipments will be treated no differently

- We previously provided information to The Scottish Government to assist in their response to correspondence received on this subject. We will continue to liaise with The Scottish Government to ensure it is kept informed of any developments relating to the possible shipment of this waste through Scottish waters
- The National Contingency Plan for Marine Pollution from Shipping and Offshore Installations was written after consultation with all players in the transport supply chain, including local authorities, to address all types of cargo which transit UK waters”.

Similar responses have been provided by relevant authorities in Denmark and Norway.

## 5. International NGO co-operation

There has been considerable and growing international co-operation between NGOs and local authorities in raising concerns to the public around these shipments. Over 50 Canadian, American and European NGOs have joined a coalition of groups campaigning around them. National nuclear groups in the UK and Ireland who have joined this initiative include the NFLA and KIMO International. A full list of the supporting groups co-operating around this issue is attached below as Appendix 1. A joint open letter, signed by the NFLA and KIMO International, and 20 other European groups, including CND, the French group Reseau Sortir du Nucleaire,

Food and Water Europe, the Green Party 'Vestfold' in Norway and Friends of the Earth in Denmark and Scotland; called for the Canadian, US, UK, Danish, Norwegian and Swedish governments to demand a stop to Bruce Power's plan to ship radioactive waste on the Great Lakes to Sweden (18).

The groups share 7 key concerns about the shipments, which are summarised by both the CCNR and the Council of Canadians in their submission to the Canadian Parliament's Standing Committee on Natural Resources (19):

- The shipment's failure to meet established national and international regulations.
- The shipment sets a dangerous precedent for the Great Lakes.
- The need for a more detailed Environmental Impact Assessment.
- An accident puts drinking water and public health at risk.
- The risks of recycling radioactive material in scrap metal.
- The lack of meaningful public consultation.
- The need to uphold the 'precautionary principle' recognised in international law.

Ongoing correspondence is taking place between this large international coalition of concerned groups. A joint media release between the Council of Canadians, KIMO International and NFLA was issued on 18<sup>th</sup> April. Further joint media releases will be issued around this briefing and following specific developments over the shipments, once Bruce Power seeks permission from American authorities to transport the shipments through its territorial waters.

## 6. Council resolutions on the proposed shipments

Across Canada and the areas around the Great Lakes in the United States a large number of municipalities have passed resolutions of concern or direct opposition to the shipments.

As of mid June 2011, 136 municipalities had passed resolutions of concern in Quebec, representing a total population of 477,000 (19). In addition, the GLSLCI represents a large number of municipalities and regional authorities in Ontario who have passed similar resolutions.

The generic Canadian resolution can be downloaded from the CCNR website through the following weblink: [http://www.ccnr.org/Resolution\\_f.pdf](http://www.ccnr.org/Resolution_f.pdf)

Following discussion at the June 24<sup>th</sup> meeting of the NFLA Steering Commission it was agreed that a model resolution, adapted from the Canadian resolution, be developed for UK and Ireland NFLA members and non-members, particularly targeted at coastal authorities, though it may well also be of interest to local authorities dealing with large amounts of scrap metal. A similar resolution has also been developed for KIMO members across Europe.

A model resolution for UK and Irish NFLA members and non-member Councils is attached as Appendix 2 and a model resolution for KIMO municipalities is attached as Appendix 3.

## 7. The current situation and potential future developments

Following the recent meeting between Bruce Power and Canadian First Nation groups NGOs and local authorities are awaiting the company's next action - a formal request for permission to commence the shipment with the US PHMSA. American NGOs are planning to lobby the PHMSA to reject this request when it is made.

If the US authorities grant the request then Bruce Power will announce dates when shipments will begin. It is likely that Canadian and Swedish NGOs will publicise these dates and actively campaign against them at the ports and through the media. Further shipments of a further 16 generators are also likely, should this initial shipment go ahead.

The NFLA and KIMO International will monitor developments with the Canadian NGOs and inform its own members of potential future action.

## 8. **Conclusion and further action**

At the heart of this shipment are four major issues:

1. Do UK and Irish NFLA members, KIMO members and other Councils (nationally and internationally) want radioactive waste that exceeds legal limits, or even radioactive waste in general, to be shipped through national and international waters? Since water flows and does not respect national or provincial borders, polluted water outside of UK and Irish borders could return to rivers, lakes and coastline. As well, with growing water scarcity and water stress around the world, an accident involving such a shipment could raise a serious threat to dwindling water resources (the Great Lakes are a major source of drinking water for 40 million people in Canada and the United States).
2. The NFLA has a long-standing policy that radioactive waste should be managed safely near the site of origin and transportation of radioactive materials should be reduced to the absolute bare minimum. Bruce Power declared in their 2006 Environmental Assessment documents that they would not move the steam generators over public roads, and that they could not be recycled because they were classified as radioactive waste. Bruce Power had signed contracts with Ontario Power Generation, (the owner of the reactors that are merely leased by Bruce Power) specifying that the steam generators would be stored and "segmented" on site, in preparation for permanent storage. (20) Given these previous assurances, the NFLA therefore strongly supports Canadian NGOs in their assertion that the materials should be dealt with by Bruce Power on site and an appropriate facility built for its safe management.
3. Although the scrap metal will remain in Sweden, it could return to UK, Ireland, Scandinavian, American or Canadian markets as manufactured goods. The NFLA has a long-standing policy to oppose the circulation of scrap metal from radioactive sources, given the health risks of long-term exposure.
4. Even if the scrap metal does not leave Sweden to other markets, what legal and moral obligations are there in contributing to scrap metal that causes potential illnesses or health risks in other countries?

The NFLA Secretariat outlines a number of further actions that it will undertake and some recommendations for member and non-member Councils:

- The NFLA Secretariat recommends that member councils and non-member Councils to which this Briefing has been sent make their senior environmental health officers, public health officers, waste management officers and emergency planning officers aware of this issue.
- The NFLA recommends Councils pass the model resolutions of concern as outlined in Appendix 2 and 3.
- The NFLA Secretariat will continue to monitor developments on the issue and inform members of any important changes with this issue.
- The NFLA Secretariat will liaise with KIMO International and with Canadian, American and Scandinavian NGOs on the shipments, joint media work and further actions.
- The NFLA Secretariat will send this Briefing to the appropriate UK and Irish Parliamentary Select Committees for their consideration.
- The NFLA Secretariat plans to write again to the UK and Scottish Governments outlining its concerns, when Bruce Power announces the shipments date, and requesting Ministers discuss the issue with their own officials and with the Canadian authorities.
- The NFLA Secretariat plans to write a joint letter with other NGOs to the International Atomic Energy Authority to clarify its views over this shipment and in reference to international shipping regulations with large cargoes containing radioactive materials.

## 9. References

- (1) Bruce Power website, 2011, <http://www.brucepower.com/about-us>
- (2) Bruce Power, explanation of the transportation of radioactive contaminated steam generators from Canada to Sweden, October 2010, <http://rightthingtodo.ca/transportation.php>
- (3) Presentation to Owen Sound City Council by Ramzi Jammal, Canadian Nuclear Safety Commission, July 2010, [http://www.nuclearsafety.gc.ca/eng/pdfs/Presentations/VP/2010/2010\\_07\\_26\\_Ramzi\\_Jammal\\_Transport\\_of\\_Steam\\_Generators\\_to\\_Sweden-Owen\\_Sound\\_e.pdf](http://www.nuclearsafety.gc.ca/eng/pdfs/Presentations/VP/2010/2010_07_26_Ramzi_Jammal_Transport_of_Steam_Generators_to_Sweden-Owen_Sound_e.pdf)
- (4) Bruce Power, op cit 2.
- (5) Bruce Power, op cit 1.
- (6) Bruce Power, op cit 2.
- (7) ibid.
- (8) See rabble.ca, independent columnist news-blog, Emma Lui, Council of Canadians, February 2011, <http://rabble.ca/blogs/bloggers/making-waves/2011/02/opposition-grows-radioactive-shipment-through-great-lakes>
- (9) See Canadian Coalition for Nuclear Responsibility website, <http://www.ccnr.org>
- (10) ibid.
- (11) ibid.
- (12) ibid.
- (13) Joint press release of Sierra Club Canada and the Canadian Environmental Law Association, June 14<sup>th</sup> 2011, <http://www.cela.ca>
- (14) The Manitoulin Expositor, 'UOI meets Bruce Power, tells them no shipment to be had on the Great Lakes', June 22<sup>nd</sup> 2011.
- (15) Swedish 'Ny Teknik' magazine article, courtesy of the Council of Canadians, 15<sup>th</sup> June 2011, [http://www.nyteknik.se/nyheter/energi\\_miljo/karnkraft/article3201126.ece](http://www.nyteknik.se/nyheter/energi_miljo/karnkraft/article3201126.ece)
- (16) Email from the Scottish Government Radioactive Materials Division to the NFLA Secretary, March 14<sup>th</sup> 2011.
- (17) Email from the UK Department of Transport to the NFLA Secretary, May 16<sup>th</sup> 2011.
- (18) See NFLA website for media release and Council of Canadians website, April 26<sup>th</sup> 2011, <http://www.canadians.org/media/water/2011/26-Apr-11.html>
- (19) Council of Canadians submission to the Canadian Parliament Standing Committee on Natural Resources. This can be found on its website.
- (20) Information provided to the NFLA by Gordon Edwards, Canadian Coalition for Nuclear Responsibility, June 8<sup>th</sup> 2011.

**International coalition of groups concerned over Canadian radioactive waste shipments**

- Anishinabek Nation, Union of Ontario Indians - Canada
- Assembly of First Nations - Canada
- Beyond Nuclear - USA
- Bruce Peninsula Environmental Group Inc. - Canada
- Campaign for Nuclear Disarmament - UK
- Campaign for Nuclear Disarmament - London region
- Canadian Coalition on Nuclear Responsibility
- Canadian Environmental Law Association
- Chiefs of Ontario - Canada
- Citizens Against Radioactive Steam Generators in Owen Sound - Canada
- Citizens Environment Alliance of South Western Ontario - Canada
- Citizens for Alternatives to Chemical Contamination - USA
- Clean Air Alliance - Canada
- Coalition for a Nuclear Free Alberta - Canada
- Coalition for a Nuclear Free Great Lakes – Canada / USA
- Concerned Citizens Committee - Canada
- Enhedlisten - Denmark
- FLOW for Water Coalition – Canada / USA
- Folkkampanjen mot kärnkraft-kärnvapen - The Swedish Anti-nuclear Movement - Sweden
- Food and Watch - USA
- Friends of the Earth Norway
- Great Lakes and St. Lawrence Cities Initiative - Canada
- Great Lakes United – Canada / USA
- Greenpeace - Canada
- Greenpeace - Sweden
- Greenworld - Russia
- Institute for Energy and Environmental Research - USA
- International Institute for Public Concern for Health - Canada
- KIMO - Shetland Islands, Secretariat
- KIMO - Sweden
- KIMO International - Europe
- Lawyers' Committee on Nuclear Policy - USA
- Mayor of Sarnia, Mike Bradley - Canada
- MILKAS - Sweden
- Mohawks of Akwasasne - Canada
- Mohawks of Kahnawake - Canada
- Mother Earth Water Walk - Canada
- National Council of Women of Canada
- New Democratic Party Ontario - Canada
- Nipissing First Nation- Canada
- North Watch - Canada
- Nuclear Energy Information Service - USA
- Nuclear Free Local Authorities – UK and Ireland
- Nuclear Information and Resource Service
- Nukewatch - USA
- On the Commons - USA
- Port Hope Community Health Concerns Committee - Canada
- Provincial Council of Women of Ontario - Canada
- Physicians for Social Responsibility - USA
- Sierra Club Canada
- Sortir Du Nucleaire - France
- Syracuse Peace Council - USA

**Model Council Resolution on Canadian shipping for NFLA members, UK & Irish Councils**

1. This Council notes that shipments of 16 (and eventually 32) radioactively contaminated bus-sized steam generators, each weighing 100 tonnes, are planned shortly to begin from a site on the Great Lakes in Canada across the Atlantic Ocean passing through UK territorial water north of the Orkney Islands and down the North Sea to a site in Sweden.
2. This Council notes that the pipes inside the steam generators are contaminated with radioactive fission products such as cobalt-60 and caesium-137; with radioactive actinides such as plutonium, americium and curium; and with radioactive activation products such as tritium (hydrogen-3) and carbon-14.
3. This Council notes that the radioactive contaminants in the steam generators contain alpha-emitters, beta-emitters and gamma-emitters, some of which have half-lives of up to 24,000 years.
4. This Council notes that the shipments will be dismantled in Sweden, with radiation stripped out of them so that much of the scrap metal can be recycled on the open market. Around 10% of the metal will then be shipped back to Canada for low-level radioactive waste storage using a similar transport route. The recycling of radioactive materials from nuclear reactors as scrap metal for commercial use should not be countenanced or encouraged.
5. This Council notes the international concern that shipping such materials that exceed the maximum amount of radioactivity allowed in international regulations for a single shipment by a factor of 6 (for ocean transport) and by a factor of 60 (for inland water transport), thus necessitating a 'special' licence; raises a dangerous precedent that should be avoided.
6. This Council notes the international concern of the difficulties with dealing with an emergency response should an accident or malicious incident occur with such shipments.
7. This Council notes international concern over the poor quality and general lack of consultation of this decision in Canada and by other National Governments where the shipment travels through or in proximity to its territorial waters (namely the United States, the United Kingdom, Norway, Denmark and Sweden).

**RESOLVES TO:**

1. Oppose in principle any shipment through UK territorial waters of radioactive waste or radioactively contaminated equipment from the decommissioning, refurbishment, or routine operation of nuclear reactors from another country.
2. Write to the Governments of Canada and the United States urging them to insist that the shipment of redundant nuclear steam generators through UK territorial waters does not take place. The letter should also include the assertion that radioactive waste should be managed near their place of origin and not transported over such large distances.
3. Write to the United Kingdom and Scottish Governments urging them to refuse permission to the shipments and inform the Canadian Government of their opposition to the shipments.
4. Write to the same Governments to recognise used nuclear steam generators as radioactive waste.
5. Write to the Swedish Government to prevent the recycling of the scrap metal on to the open market, where it may be used in future consumable goods.

**Model Resolution on Canadian shipments radioactive waste for KIMO Municipalities**

1. This municipality notes that shipments of 16 (and eventually 32) radioactively contaminated bus-sized steam generators, each weighing 100 tonnes, are planned shortly to begin from a site on the Great Lakes in Canada across the Atlantic Ocean passing through UK territorial water north of the Orkney Islands and down the North Sea to a site in Sweden.
2. This Municipality notes that the pipes inside the steam generators are contaminated with radioactive fission products such as cobalt-60 and caesium-137; with radioactive actinides such as plutonium, americium and curium; and with radioactive activation products such as tritium (hydrogen-3) and carbon-14.
3. This Municipality notes that the radioactive contaminants in the steam generators contain alpha-emitters, beta-emitters and gamma-emitters, some of which have half-lives of up to 12,500 years.
4. This Municipality notes that the shipments will be dismantled in Sweden, with radiation stripped out of them so that much of the scrap metal can be recycled on the open market. Around 10% of the metal will then be shipped back to Canada for low-level radioactive waste storage using a similar transport route. The recycling of radioactive materials from nuclear reactors as scrap metal for commercial use should not be countenanced or encouraged.
5. The decontamination and recycling of the metal would result in additional emission to the Baltic environment, which is already the most radioactive sea in the world.
6. This Municipality notes the international concern that shipping such materials, thus necessitating a 'special' licence; raises a dangerous precedent that should be avoided.
7. This Municipality notes the international concern of the difficulties with dealing with an emergency response should an accident or malicious incident occur with such shipments.
8. This Municipality notes international concern over the poor quality and general lack of consultation of this decision in Canada and by other National Governments where the shipment travels through or in proximity to its territorial waters (namely the United States, the United Kingdom, Norway, Denmark and Sweden).

**RESOLVES TO:**

1. Oppose in principle any shipment through our territorial waters of radioactive waste or radioactively contaminated equipment from the decommissioning, refurbishment, or routine operation of nuclear reactors from another country.
2. Write to the Governments of Canada and the United States urging them to insist that the shipment of redundant nuclear steam generators through our territorial waters does not take place. The letter should also include the assertion that radioactive waste should be managed near their place of origin and not transported over such large distances.
3. Write to the Governments on the route of the shipment urging them to refuse permission to the shipments and inform the Canadian Government of their opposition.
4. Write to the same Governments to recognise used nuclear steam generators as radioactive waste.
5. Write to the Swedish Government to prevent the recycling of the scrap metal on to the open market, where it may be used in future consumable goods.