February 16, 2012

Minutes of the Canadian Nuclear Safety Commission (CNSC) Meeting held Thursday, February 16, 2012 beginning at 9:10 a.m. at the Public Hearing Room, 14th floor, 280 Slater Street, Ottawa, Ontario.

Present:

M. Binder, President
R.J. Barriault
A. Harvey
M. J. McDill
D.D. Tolgyesi
R. Velshi

M. Leblanc, Secretary
J. Lavoie, Senior General Counsel
D. Carrière, Recording Secretary

CNSC staff advisors were: R. Jammal, G. Rzentkowski, F. Rinfret, A. Régimbald, P. Fundarek, S. Faille, L. Jobin, M. Petrovic, M. Rickard, P. Webster, P. Elder, S. Locatelli, M. Dallaire, S. Belyea, P. Thompson, M. Rinker, C. Moses, J. Leclair, C. Dodkin

Other contributors were:

- Bruce Power: F. Saunders
- SGS Canada Inc.: H. Lagadec, D. Hanna and P. Robillard
- Environment Canada: C. Doiron
- AECL Low Level Radioactive Waste Management Office: M. Gardiner and M. Owen

Constitution

1. With the notice of meeting, CMD 12-M1, having been properly given and a quorum of Commission Members being present, the meeting was declared to be properly constituted.

2. Since the meeting of the Commission held December 15, 2011, Commission Member Documents CMD 12-M1 to CMD 12-M10 were distributed to Members. These documents are further detailed in Annex A of these minutes.

Adoption of the Agenda

3. The revised agenda, CMD 12-M2.B, was adopted as presented.

Chair and Secretary

4. The President chaired the meeting of the Commission, assisted by M. Leblanc, Secretary and D. Carrière, Recording Secretary.

Minutes of the CNSC Meeting Held December 15, 2011

5. The Commission inquired on paragraph 9 of the Minutes of the December 15, 2011 Commission Meeting, asking when to expect the follow-up on the hydrazine leak event at the Point Lepreau Generating Station. CNSC staff responded that an update will be provided to the Commission at the Commission Meeting to be held on March 28 and 29, 2012.

6. The Commission Members approved the minutes of the December 15, 2011 Commission Meeting as presented in CMD 12-M3.

STATUS REPORTS

Status Report on Power Reactors

7. With reference to CMD 12-M4, which includes the Status Report on Power Reactors, CNSC staff presented updates on the following:

   - Bruce B, Unit 7 is at 93 percent of full power;
   - Bruce B, Unit 8 is shut down to repair a leak in an instrument line of the heat transport system; and
   - Point Lepreau is undergoing lower feeder installation, with the Reactor East Face at approximately 85 percent complete and the Reactor West Face at approximately 75 percent complete. The fuel load is expected to be undertaken on March 15, 2012.

8. CNSC staff provided clarifications regarding an apparent misinterpretation by some members of the public of important facts associated with a small spill of heavy water of four to six litres in the reactor building of the Point Lepreau Nuclear Generating Station (NGS). CNSC staff explained the details of the event, as presented during the Commission Meeting held on December 15, 2011, emphasizing that the spill did not result in any risk to the workers, the public or the environment. CNSC staff reported having verified that all precautionary measures were taken by New Brunswick Power (NB Power) to protect the workers.

9. With regards to an event involving a malfunction of safety doors at the Point Lepreau NGS, which occurred immediately following the spill of heavy water discussed above, CNSC staff stated that there was no degradation or impairment of the containment envelope preventing the containment from performing its safety-related function during the event. CNSC staff also reported that this event did not result in a reportable dose of radiation to the workers involved and that the safety doors could have been manually opened at any time.

10. CNSC staff also provided further details regarding the tritium levels in the heavy water at the Point Lepreau NGS. CNSC staff explained that NB Power presented a safety case for re-using the heavy water which adequately addressed the risk posed by tritium emission to workers, the public, or the environment. CNSC staff reported having reviewed and accepted the safety case as part of preparation for refurbishment activities. CNSC staff also reported that NB Power has made improvements to its facilities during the refurbishment to ensure the rapid detection, containment and ventilation of tritium under normal operating conditions and during unplanned event.

11. The Commission asked if the ALARA principle[1] is being applied to minimize tritium levels at the Point Lepreau NGS and if there are plans to remove or reduce the tritium concentration in the heavy water. CNSC staff explained that the ALARA principle is the overarching safety principle that always applies. CNSC staff stated that they evaluated every option from a risk perspective before the start of the refurbishment and determined that using the existing heavy water is the lower risk option. CNSC staff also reported that they believe NB Power can exercise due diligence and minimize any exposure of workers to the extent practicable. CNSC staff stated that they will continue to monitor and provide regulatory oversight of NB Power's commitment to manage tritium under a five-year dose reduction plan.

12. With reference to a question from the Commission regarding the unsuccessful turbine overspeed protection test at Pickering B, Unit 6, CNSC staff explained that a turbine overspeed protection device failed during a routine test, which led to a reactor shutdown. CNSC staff reported the cause of the failure, which was binding within the trip plunger of the overspeed trip device, and stated that component age is not believed to be a contributing factor. CNSC staff added that this event is the first failure of a turbine overspeed protection

[1] Radiation protection concept for keeping the amount of exposure to radon progeny and the effective dose and equivalent dose received by and committed to persons as low as reasonably achievable, social and economic factors being taken into account (Regulatory Guide G-129, *Keeping Radiation Exposures and Doses "As Low As Reasonably Achievable (ALARA)"*).

device at Pickering B NGS. The Commission asked if the turbines have fail-safe systems which prevent them from overspeeding in the event of an overspeed protection device failure. CNSC staff explained that the Pickering B NGS turbines have two fully redundant overspeed trip devices that trigger the shutdown of the turbines when turbine speeds exceed 110 percent of normal speed. CNSC staff also explained that the trip devices are routinely tested to ensure they are functioning properly. CNSC staff reported that Unit 6 has since returned to service.

13. In response to a question from the Commission regarding the Gentilly-2 NGS operating power level, CNSC staff explained that the unit is derated to approximately 89.5 percent full power due to plant aging factors.

14. The Commission requested an update of the refurbishment plan for Gentilly-2 NGS. CNSC staff explained that Hydro-Québec has made a recommendation to the provincial government to proceed with the refurbishment of Gentilly-2 and that a decision is expected to be rendered by the province of Québec in the spring of 2012. CNSC staff explained that Hydro-Québec's current licence allows them to operate under certain conditions, and that they will be allowed to operate until the next hold point on December 31, 2012 as long as they meet the conditions of the licence.

15. The Commission requested information on the governor valve oscillation issue reported for Bruce A, Unit 4. CNSC staff and a representative from Bruce Power both explained that a governor valve developed an unstable oscillation of the valve stem caused by a large pressure drop across the valve. The representative from Bruce Power offered further explanation on the origin of the oscillation issue, explaining that the oscillations were causing fluctuations in temperature at the reactor inlet, which should be minimized to prevent reactor trips or other protective action. CNSC staff explained that the oscillations in the governor valve were removed by derating the reactor power to reduce the flow through the valve, which in turn reduced the pressure drop. The representative from Bruce Power stated that they have been investigating this issue for several months and plan to repair the valve during the next reactor outage. The representative from Bruce Power also reported that the governor valve oscillation issue does not pose a safety concern; it is only an economic issue since the reactor requires to be derated to avoid inadvertent reactor trips.

16. The Commission enquired about the routine leak at Bruce B, Unit 8. The representative from Bruce Power explained that routine leaks are very small leaks normally found in instrument lines. The representative from Bruce Power confirmed that the routine leak discussed in this status report was on an instrument line and that

they decided to advance the outage planned for the fall of 2012 to fix the leak and prevent vapour from accumulating in the reactor vault. CNSC staff explained that a station is designed to control a leak at the design leak stage, which is higher than a routine leak, to protect workers from radiation exposure.

Early Notification Reports

Bruce Power: Incident declared due to tritium alarm at Bruce A Auxiliary Service Building

17. With reference to CMD 12-M8 regarding an incident declared following a tritium alarm at Bruce A Auxiliary Service Building, CNSC staff presented a description of the event, including Bruce Power's response to the event. CNSC staff reported that the event resulted in a low risk of low level exposure to 13 workers who were in the area at the time of the event and that the maximum dose received was 0.05 milliSievert or 0.1 percent of the annual dose limit for nuclear energy workers. CNSC staff also reported that there was no measurable amount of heavy water loss during the event. A representative from Bruce Power explained why and how they transport heavy water on site, stating that it is a fairly regular activity.

18. The Commission asked if they found elevated radiation levels along the truck route to Bruce A from Bruce B. The representative from Bruce Power responded that tritium was the only source of radiation in the heavy water that was being transported and that tritium was not detected in soil and puddle samples across the site. The representative from Bruce Power reported that the only place they found tritium was in an active drain at the Auxiliary Service Building.

19. The Commission asked if Bruce Power will lower the maximum fill volume of the trucks to prevent future losses of heavy water during transport. The representative from Bruce Power responded that decisions on whether to reduce the maximum fill volume will only be taken once the investigation is complete and when the cause of the rupture of the disk is known.

20. The Commission requested information about the number of heavy water transport trucks owned by Bruce Power and about the frequency of heavy water transports on site. The representative from Bruce Power responded that they currently have two trucks and that the frequency of heavy water transportation is on average four to five times per year, depending on operating demand.

21. The Commission asked if there was a possibility that the disk ruptured prior to the truck being filled and the heavy water being transported. The representative from Bruce Power explained that a standard metal rupture disk is required to be in place when loading heavy water onto the truck because loading and unloading are performed under relatively low pressure (less than 15 psi). The representative from Bruce Power added that they know the failure occurred between the loading operation at Bruce B and arrival at Bruce A.

22. The Commission enquired about information that was provided to the public regarding this event. The representative from Bruce Power explained that they notified the public of the event, answered questions from the public, spoke to various newspapers, and posted information on their Web site. The representative from Bruce Power stated that they have not received further enquiries into this event since it occurred.

23. The Commission enquired about the nature of the detailed event report. CNSC staff responded that the detailed event report will include the conclusions from the investigation. CNSC staff added that if a root cause is not found, the design of the truck, and specifically the design of the overpressure protection device, as well as the fill volume of the truck will be assessed. Bruce Power reported that they will conduct a thorough investigation to prevent a reoccurrence of this event and will look into the possibility of using other types of heavy water transport packages.

Bruce Power: Bruce A Partial Loss of Class III and Class IV Power to Unit 0

24. With reference to CMD 12-M10 regarding a partial loss of Class III and Class IV Power to Unit 0 of Bruce A, CNSC staff presented their preliminary findings and stated that the main control room did not lose power or the ability to communicate outside the station at any point during the event. CNSC staff stated that the event did not result in any impact on the health and safety of the workers and the public. CNSC staff reported that the event caused a slight reduction of the effectiveness of two special safety systems but that these two safety systems were capable of performing their function at all times. The representative from Bruce Power also provided background information on the event.

25. The Commission asked if there are other systems available to compensate for the unavailability of Class III and Class IV power to Unit 0. The representative from Bruce Power explained how power loads can be redistributed and said that the station is designed with many redundant power supplies to ensure that essential safety equipment always have access to the required source of power at all times.

26. The Commission enquired about the possible consequences that could have resulted from a delay in operator action during this event. The representative from Bruce Power explained that a delay in operator action would have led to a fairly low-level impairment and that the potential consequence would be that a small portion of the emergency cooling injection flow would have by-passed the core due to one valve failing to close.

27. The Commission enquired about the reaction of workers throughout the event and about communication methods. The representative from Bruce Power explained that all normal communication channels such as the public address (PA) system and telephones functioned properly throughout the event. The representative from Bruce Power also explained that staff reaction was as expected and instructions were quickly provided upon the initiation of the event. CNSC staff reported that the CNSC head office in Ottawa was not immediately notified of the event due to the Blackberry server outage caused by the loss of power. However, CNSC staff stated that CNSC site inspectors were immediately notified and dispatched to investigate and observe recovery actions.

28. The Commission asked if there is a possibility for the control room to lose its ability to communicate outside the station during any event. CNSC staff responded that redundancy in power supplies assures continued ability to communicate outside the station in any event.

29. The Commission asked if the root cause will be shared with other nuclear operators once it is known. The representative from Bruce Power indicated that the operating experience will be shared with other operators, as per their standard process.

30. The Commission asked why detailed event reports are due in approximately 45 days, why no firm date. CNSC staff clarified that detailed event reports are due at most 45 days after event detection, and that these reports can be filed sooner.

31. The Commission asked if, at any time during the event, there was the possibility that there would not have been backup power supply to the cooling pumps. CNSC staff and the representative from Bruce Power explained that power was only lost in Unit 0, which does not provide a power load to safety systems or to systems that are credited for the operation of the plant. The representative from Bruce Power added that loads to safety systems or systems credited for the operation of the plant have redundant power supplies. The representative from Bruce Power also added that this event was not safety significant, but rather economically significant since the shutdown of the reactor was required.

32. The Commission asked if an event of this type has happened while conducting other scheduled tests. CNSC staff reported that their event database includes 51 events reported for loss of Class IV or for a Class IV bus failure at Canadian nuclear power reactors over a period of 50 years and that these events involved localised loss of Class IV power. CNSC staff also reported that the majority of these events have caused a loss of redundancy, which does not amount to a serious loss of power.

33. The Commission asked if the system that failed is an old system and asked how often its operability is verified. The representative from Bruce Power responded that the electrical system is part of the original design of the plant and that it is frequently tested. The representative from Bruce Power added that they do a significant amount of preventative maintenance on that system to ensure high reliability targets are maintained. The representative from Bruce Power explained that following this failure, they will now assess the system and similar components to determine the corrective actions required to prevent this event from reoccurring.

SGS Canada Inc.: Overexposure to Operator during Emergency Source Retrieval of Industrial Radiography Source

34. With reference to CMD 12-M9 regarding an overexposure to a SGS Canada Inc. operator during emergency source retrieval of an industrial radiography source, CNSC staff presented an overview of the incident and the ensuing consequences noted to date. CNSC staff reported that the operator has not observed any medical symptoms or other reactions in his finger in relation to the incident and that the licensee continues to follow-up on the care of the individual. CNSC staff also demonstrated the radiography device and provided details of their ongoing investigation on the cause and circumstances of the incident.

35. The Commission enquired about the response of the operators during the event. Representatives from SGS Canada Inc. (SGS Canada) responded that they followed the CNSC protocol regarding industrial radiography source retrieval, and indicated that the event lasted a total of two and a half to three hours. SGS Canada stated that they used a one and a half metre long tool to retrieve the ejected source and place it back into the radiography device. CNSC staff confirmed that SGS Canada Inc. followed their emergency procedures in response to this event and noted that the operator inadvertently pushed on the source with his index finger in an attempt to put it back into the radiography device. CNSC staff stated that the source was eventually placed back inside the device using other mechanical means. A representative from SGS Canada explained that the overexposed operator was the only operator near the source during the exposure since their procedure states that they are to always approach the source one individual at a time to reduce the collective dose.

36. The Commission enquired about the certification of the operators involved in this event. CNSC staff stated that, during the event, one certified exposure device operator and two other licensee staff (who were non-certified operators) were present. CNSC staff explained that the operator manoeuvring the radiography device is required, by CNSC regulations, to be either certified by the CNSC or be under the direct supervision of a certified operator. CNSC staff confirmed that the operator manoeuvring the radiography device and who was exposed to the source is a certified exposure device operator.

37. The Commission asked for further information regarding the radiography device and the process used to approve its use. CNSC staff responded that the radiography device is manufactured by QSA Global. CNSC staff explained the approval process and stated that the CNSC must approve (i.e. certify) the design and use of radiography devices, and that licensees are authorized to use the devices noted in their licence.

38. The Commission asked why the source was ejected from the radiography device. CNSC staff responded that they are currently investigating why the source was expelled. The Commission asked how often a device malfunction of the type described in this event report occurs. CNSC staff and representatives from SGS Canada both responded that events of this type occur infrequently. SGS Canada added that they have not had to do any source retrieval at their three locations over the last 20 years. The Commission requested that CNSC staff report back with information on the frequency of this type of device malfunction, as noted by radiography device repair shops, as part of a follow-up report to the Commission.

ACTION due May 2012

39. The Commission asked if radiography device malfunctions are communicated with the industry. CNSC staff responded that when a malfunction is noted on a type of device, CNSC staff:
    - may withdraw the approval for use of that type of device (i.e. decertify the device) until the issues are addressed by the manufacturer;
    - alert the licensees who operate the device in question; and
    - publish information in the Directorate of Nuclear Substance Regulation Newsletter concerning the issues found regarding a device.

    CNSC staff explained that once the manufacturer addresses the issues, the radiography device must be re-approved (i.e. re-certify) for use by the CNSC.

40. The Commission asked if SGS Canada sought assistance from the manufacturer during the event. SGS Canada responded that the manufacturer was not contacted during the event since the procedures provided by the manufacturer contained the information they required to replace the source into the device.

41. The Commission enquired about the service schedule of the radiography device. CNSC staff responded that the radiography device must follow the maintenance schedule recommended by the manufacturer and that the device must be inspected daily by the licensee before it is transported for radiography operations. CNSC staff added that the lock assembly is disassembled once per year to examine the inside of the device. CNSC staff also described the verifications performed by the licensee during the daily licensee inspections and stated that SGS Canada provided their daily inspection sheet to the CNSC to demonstrate that they had completed an inspection prior to using the device on the day the event occurred.

42. The Commission asked if a shielded container is available to carry a source in the event it is ejected from the radiography device. CNSC staff responded that a source changer container could have been employed but that these are normally only owned by the manufacturers of radiography devices due to their cost. CNSC staff explained that the radiography device itself is the CNSC-approved source transportation package used by licensees. CNSC staff stated that a shielded container can be temporarily used to shield a source that has been ejected from a radiography device, but that these shielded containers are not approved for transport. The Commission asked if other means of securing sources for transportation could be developed to prevent a reoccurrence of this event. CNSC staff responded that they will review the details of this event and review the emergency procedures used by the licensee to determine the corrective measures that could be applied and to determine if additional requirements are necessary.

43. The Commission enquired about the dose estimate of the exposed individual. CNSC staff responded that they consider the dose estimate to be conservative based on the probability that the source was touched for less than the estimated one second and based on the fact that radiation health effects have not been observed. CNSC staff explained that health effects expected at the estimated dose level of four Sieverts are reddening of the skin. The Commission asked if the exposed operator was wearing protective clothing during the exposure. Representatives from SGS Canada stated that the operator was wearing gloves. CNSC staff added that protective clothing would not have reduced the dose received from the exposure because the source is sealed and is a strong photon emitter.

44. The Commission asked if the detailed event report was submitted by SGS Canada by the February 10, 2012 deadline. CNSC staff responded that they have received the report and are currently reviewing it. CNSC staff added that they are analyzing available information to determine the root cause and possible corrective measures from a regulatory perspective. CNSC staff noted that, although an event of this type is rare, they will review their incident database to determine possible actions required.

Update on items from previous Commission proceedings

Update on the Public Information Program for Devices Containing Radium Luminous Compounds

45. With reference to CMD 12-M6, CNSC staff presented an update on issues related to the exemptions from licensing of devices containing radium luminous compounds and presented information regarding the success of the public information program developed to support the licensing exemption.

46. The Commission enquired about the types of radium luminous devices (RLD) accepted for disposal by AECL's Low Level Radioactive Waste Management Office (LLRWMO). A representative from AECL responded that they accept and recover all RLDs and arrange for disposal with a CNSC licensed nuclear waste management facility.

47. The Commission requested information on facilities that recover RLDs and on the number of recoveries performed per year. CNSC staff responded that any request received from a member of the public who is interested in disposing RLDs safely is referred to AECL's LLRWMO. A representative from AECL explained that they receive approximately a dozen requests per year and that any one request can be for one or more RLDs.

48. The Commission asked if there are any types of RLDs that can be disposed in non-nuclear waste management facilities. CNSC staff responded that RLDs are not regulated by the amount of radium they contain; therefore all of the RLDs must be disposed at a CNSC licensed radioactive waste management facility.

49. The Commission enquired about the quantity of radium found in timepieces. CNSC staff explained that a study conducted by the former Atomic Energy Control Board determined that the estimated quantity of radium in watches is typically less than the CNSC licensable quantities. However, CNSC staff stated that because timepieces containing radium are regulated under the *Nuclear Safety Control Act* and Regulations, they are required to be disposed with licensed nuclear waste management facilities. The

Commission asked if CNSC staff will recommend that the Regulations be changed to exclude timepieces, since they typically contain an amount of radium that is less than licensable quantities. CNSC staff responded that, while the amount of radium typically contained in timepieces is below licensable quantities, timepieces are not excluded from the Regulations to ensure proper disposal and servicing of all RLDs to minimize the risk of exposure to radium.

50. The Commission asked how many timepieces are recovered at AECL's LLRWMO. A representative from AECL responded that they have never been asked to recover a timepiece. The Commission asked if portal radiation monitors at municipal waste facilities can detect the low level of radium contained in timepieces. A representative from AECL responded that one RLD will generally trigger a portal monitor, but that different makes of portal monitors have different thresholds. CNSC staff explained that the fact that timepieces are not being recovered by AECL's LLRWMO indicates that they are probably being disposed of with domestic waste. CNSC staff stated that approximately 30 portal alarms at non-nuclear waste facilities are reported to the CNSC every year and that not one of the alarms has involved a timepiece to date. CNSC staff also stated that the portal alarms are set at almost background levels and that not all municipalities have portal alarms.

51. The Commission enquired about the level of radiation dose that could be received from a tampered timepiece containing radium. CNSC staff responded that the dose depends on the size of the timepiece and the amount of radium contained within. CNSC staff stated that the risk assessments conducted focused on users or handlers of the timepieces (which remain intact), not on servicing of the timepieces.

52. The Commission asked what fraction of RLD owners have been reached through the CNSC's public information program. CNSC staff responded that, although the actual number of owners that have been reached is unknown, they are confident that every stakeholder group identified as likely to have the largest collections of RLDs (aviation community and museums) have been reached. CNSC staff stated that they have expanded their outreach to include the military collectors. CNSC staff explained that reaching out to members of the public who might have timepieces is challenging due to the extensive number of timepieces containing radium produced in the past. CNSC staff stated that they hope to reach timepiece owners through information on the CNSC Web site and through antique collector outreach.

53. The Commission enquired about an event where an airport hangar was found to be storing a number of RLDs. A representative from AECL explained that AECL's LLRWMO was involved in the remediation of that particular site and that the RLDs were collected, packaged and transported to an AECL licensed nuclear waste management facility in Chalk River following an established protocol.

54. The Commission enquired about public interest in RLD information published by the CNSC. CNSC staff responded that the brochures presented to the Commission are also available online and that they are averaging one phone call or email per month. CNSC staff added that there were approximately 1,200 Web page hits for pages containing information on radium on the CNSC Web site during the period of July 2010 to September 2011 and that they will consider adding information on CNSC social media sites.

55. The Commission asked how the regulation came about for requiring persons who possess or use more than 10 RLDs to obtain a CNSC licence. CNSC staff explained that the number 10 was introduced to trigger licensing for possession and use, and that it was based on a study that was conducted under the Atomic Energy Control Board, which is the average number of RLDs found in an instrument panel of an older aircraft. CNSC staff stated that the average dose from 10 RLDs is difficult to estimate because it depends on many factors such as how they were manufactured, how much paint was used, how much radium was mixed in the paint, etc. CNSC staff stated that, based on the information they have, the risk assessment on which the Commission exempted possession of these devices remains valid.

56. The Commission asked if resources related to the regulatory oversight of RLDs will slowly be reduced, since the risk associated with RLDs is slowly diminishing. CNSC staff confirmed that it would, and that their outreach efforts are focused on collectors who are likely to possess a number of RLDs.

57. The Commission requests an update from CNSC staff regarding issues related to the exemptions from licensing of devices containing radium luminous compounds in five years. **ACTION due February 2017**

DECISION ITEMS – Regulatory Documents

Regulatory Document RD/GD-99.3, *Requirements and Guidance for Public Information and Disclosure*

58. With reference to CMD 12-M5, CNSC staff presented to the Commission its recommendation on the approval of the regulatory document RD/GD-99.3, *Requirements and Guidance for Public Information and Disclosure*, for publication.

59. The Commission enquired about the distinction between a target audience and the public. CNSC staff explained that licensees are required to determine their audience and then let the public comment to ensure the licensee has properly defined its audience. The Commission asked how public interest received from outside the geographical area of the licensee's facility is included in the licensee's target audience. CNSC staff responded that more priority is given to stakeholders from within the general vicinity of the facility but that comments from outside the geographical area are also taken into consideration.

60. The Commission asked what criteria are used to qualitatively measure the public perception of risk and the public level of knowledge. CNSC staff responded that the public information program strategy includes information products, samples of information packages, and methods used to disseminate information to the public. CNSC staff explained that timely information issued to the public audience will limit the perception of risk for the facility. CNSC staff stated that once the target audience is identified, licensees get indications from that audience of what information is required and what their level of knowledge is. CNSC staff also explained that licensees build trust through openness and transparency, and by preparing information in a plain language and in a timely fashion.

61. The Commission asked who establishes the reporting criteria based on public interest. CNSC staff responded that they expect licensees to discuss the reporting criteria with their stakeholders. CNSC staff stated that licensees need to be proactive in their disclosures to stakeholders. CNSC staff added that the criteria need to be flexible and modifiable, and that licensees should obtain regular feedback from their stakeholders regarding their reporting efforts.

62. The Commission enquired about the industry's reaction to the requirements of RD/GD-99.3, specifically that the requirements will increase reporting. CNSC staff responded that there will be some duplicate reporting of events; however the reports would be developed with different audience in mind (i.e. public vs.

regulator). CNSC staff stated that there has not been a large increase in reporting for licensees who already follow the requirements of this regulatory document. CNSC staff added that for licensees with smaller facilities, where additional reporting could add a significant burden, the process allows for discussions with the CNSC on the appropriate level of reporting, taking into account the level of public interest.

63. With reference to a question from the Commission regarding assurance that licensees will be transparent in their disclosures, CNSC staff responded that they will ensure, through compliance verifications, that licensees are meeting the requirements of RD/GD-99.3.

64. The Commission enquired about public participation in the review of RD/GD-99.3. CNSC staff explained that this regulatory and guidance document was published on the CNSC Web site and emailed to all subscribers on the CNSC distribution list, which includes several media institutions, members of nuclear organizations and general members of the public, for review. CNSC staff stated that the low level of public participation in the review of regulatory documents is not uncommon, since the industry typically has a larger interest in the requirements of regulatory documents.

65. The Commission asked if lessons learned from the Fukushima nuclear incident relating to communication efforts have been incorporated in RD/GD-99.3. CNSC staff responded that they have, by developing a requirement for timely information in a plain language that can be easily understood by the public.

66. The Commission asked how the CNSC will ensure that information disclosed by licensees is accurate. CNSC staff responded that licensees are required to inform the CNSC prior to disclosing information and that CNSC staff are required to verify the accuracy of the information. CNSC staff stated that they also link information disclosed by licensees on the CNSC Web site to provide clarifications and include regulatory perspectives. CNSC staff explained that there are several mechanisms for verifying the accuracy of information disclosed, such as reviewing licensees' identification of their target audiences, public consultation records, surveys, and public opinion research.

67. After considering the recommendations submitted by CNSC staff, the Commission approves Regulatory and Guidance Document RD/GD-99.3, *Requirements and Guidance for Public Information and Disclosure*, for publication and use. DECISION

Regulatory Document RD/GD-370, *Management of Uranium Mine Waste Rock and Mill Tailings*

68. With reference to CMD 12-M7, CNSC staff presented to the Commission its recommendation on the approval of regulatory document RD/GD-370, *Management of Uranium Mine Waste Rock and Mill Tailings*, for publication.

69. A representative from Environment Canada described their efforts around the regulation of metal mining effluents into water bodies frequented by fish. The Commission asked if Environment Canada is satisfied with the regulatory and guidance document proposed by CNSC staff. The representative from Environment Canada responded that they are satisfied with the proposed document and found that it gives a clear perspective on the management of uranium mine waste rock and mill tailings.

70. The Commission asked if RD/GD-370 and the Environment Canada *Metal Mining Effluent Regulations* are in agreement. CNSC staff responded that they consulted with Environment Canada throughout the development of RD/GD-370 to ensure they are both completely aligned. The Commission asked when Environment Canada's document *Guidelines for the Assessment of Alternatives for Mine Waste Disposal* will be approved for use and whether its approval is required before RD/GD-370 is published. CNSC staff responded that the Environment Canada document is referenced in RD/GD-370 and the representative from Environment Canada confirmed that their document is published for use.

71. The Commission asked which responsible authorities were involved in the development of RD/GD-370. CNSC staff responded that they met on various occasions and had numerous exchanges with Environment Canada and the Department of Fisheries and Ocean to clarify their roles in administering the *Fisheries Act*[2] in relation to mining projects and tailings and waste rock management. CNSC staff assured that RD/GD-370 captures the requirements of the NSCA and the requirements of the *Fisheries Act*.

72. The Commission asked if the Saskatchewan Ministry of the Environment was consulted during the development of the Environment Canada document *Guidelines for the Assessment of Alternatives for Mine Waste Disposal*. CNSC staff responded that they do not know to what extent the provincial authorities were

ACTION due September 2012

[2] Fisheries Act; Revised Statutes of Canada, 1985, c. F-14

consulted but stated that the Environment Canada document was developed for the purposes of the *Fisheries Act* and the *Metal Mining Effluent Regulations*, and to meet regulatory requirements. CNSC staff offered to report back with information regarding provincial consultation.

73. The Commission enquired about actions taken when the most appropriate scientific approach is to release uranium mill waste rock and tailings in a fish bearing water body but where there is not sufficient public support. CNSC staff explained that, before the alternatives analysis is conducted, the proponent would engage the public to select weighting factors for cost, environmental footprint, and community value. CNSC staff stated that the public and Aboriginal groups are involved at the beginning of the alternatives analysis, which ensures a transparent selection process. CNSC staff added that an alternatives analysis would demonstrate if placement of uranium waste rock and mill tailings in fish bearing water bodies is the best option, taking into consideration socio-economic factors and environmental protection. CNSC staff also added that recommendations would be made to the Commission regarding the appropriate waste management option following a technical review of the alternatives analysis by CNSC staff and Environment Canada. The Commission requested further information regarding the alternatives assessment, asking if there is a numerical method to assess one option against the other. CNSC staff responded that RD/GD-370 provides this method. The Commission stated its position that waste rocks and tailings should not be put in fish bearing lakes, except in rare circumstances.

74. The Commission asked if the Canadian Dam Association tailing disposal guidelines were consulted in the development of RD/GD-370. CNSC staff responded that they do have employees who are members of this association who were involved in the writing of RD/GD-370.

75. The Commission enquired about operating mines and compliance with RD/GD-370. CNSC staff responded that the requirements of RD/GD-370 apply to new applications only. With regards to existing mining operations, CNSC staff explained that existing tailings and waste rock facilities are compliant with the requirements of RD/GD-370 since they are all above-ground or in-pit tailings facilities (no waste rocks or tailings are placed in fish-bearing water bodies) and that there is no intent to apply the requirements of RD/GD-370 to existing facilities.

76. The Commission asked how waterfowls are protected from contamination from the tailings and waste rocks. CNSC staff responded that a detailed assessment based on a sample of waterfowls, which included tissue analysis of radionuclides and dose assessment for members of the public who could consume the waterfowl, determined that waterfowls contaminated by the tailings would not pose a risk to members of the public. The Commission enquired about minimizing the risk to the public regarding waterfowls. CNSC staff explained that there exist various methods to deter waterfowls from tailings management areas and stated this regulatory and guidance document addresses this by requiring risk to the environment in general to be minimized. CNSC staff added that human health is one of the factors considered during the alternatives assessment for managing this waste.

77. The Commission enquired about the management of waste rock overburden. CNSC staff explained that mines are encouraged to re-use clean waste rock in their construction project to minimize the volume of waste, which is why they distinguish waste rock overburden as a term in RD/GD-370.

78. The Commission asked why both prospecting for uranium and surface exploration activities are not licensed by the CNSC and asked if certain types of exploration activities could create waste in licensable quantities. CNSC staff explained that when exploration activities start generating radioactive waste in licensable quantities, the CNSC becomes involved. CNSC staff further explained that they are aware of all exploration activities throughout Canada, and are therefore able to monitor projects that may be of regulatory interest.

79. The Commission enquired about monitoring requirements, as described in RD/GD-370. CNSC staff explained that monitoring is facility dependent and that the requirements state that licensees are to propose attributes that are going to be monitored and then demonstrate performance through ongoing monitoring of those attributes.

80. The Commission asked if regulatory policy P-223, *Protection of the Environment*, was amended to be aligned with RD/GD-370. CNSC staff responded that the content of P-223 is general and does not need to be amended following the implementation of RD/GD-370.

81. After considering the recommendations submitted by CNSC staff, the Commission approves Regulatory and Guidance Document RD/GD-370, *Management of Uranium Mine Waste Rock and Mill Tailings*, for publication and use. DECISION

Closure of the Public Meeting

82. The meeting closed at 3:45 p.m.

Sophie Gregoire for
Recording Secretary
Danielle Carrier

2012-04-16
Date

Secretary

2012-04-16
Date

APPENDIX A

CMD	DATE	File No

12-M1 2012-03-02 (Edocs 3865566)
Notice of Meeting of February 16, 2012

12-M2.B 2012-02-08 (Edocs 3879719)
Revised Meeting Agenda of February 16, 2012

12-M3 2012-02-10 (Edocs 3878493)
Approval of Minutes of Commission Meeting held on December 15, 2011

12-M4 2012-02-08 (Edocs 3876630)
Status Report on Power Reactors units as of February 8, 2012

12-M5 2012-01-30 (Edocs 3872371)
RD/GD-99.3 – Requirements and Guidance for Public Information and Disclosure - Oral Presentation by CNSC Staff

12-M6 2012-01-31 (Edocs 3872176)
Update on the Public Information Program for Devices Containing Radium Luminous Compounds – Oral presentation by CNSC Staff

12-M7 2012-01-30 (Edocs 3872056)
RD/GD-370 – Management of Uranium Mine Waste Rock and Mill Tailings – Oral presentation by CSNC Staff

12-M8 2012-02-08 (Edocs 3876576)
Early Notification Report – Bruce Power – Incident declared due to tritium alarm at Bruce A Auxiliary Services Building

12-M9 2012-02-08 (Edocs 3876612)
Early notification Report – SGS Canada Inc.– Overexposure to Operator during Emergency Source Retrieval of Industrial Radiography Source.

12-M10 2012-02-13 (Edocs 3879802)
Early Notification Report – Bruce Power –Bruce A Partial Loss of Class III and Class IV Power to Unit 0.