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| **TO:** | **CHAIR AND MEMBERS<br>COMMUNITY AND NEIGHBOURHOODS COMMITTEE<br>MEETING ON September 13, 2011** |
| **FROM:** | **PAT MCNALLY, P.ENG.<br>EXECUTIVE DIRECTOR OF PLANNING, ENVIRONMENTAL AND ENGINEERING SERVICES** |
| **SUBJECT:** | **CURRENT CONDITION – BRUCE NUCLEAR POWER PLANT** |

## RECOMMENDATION

That, on the recommendation of the Executive Director of Planning, Environmental and Engineering Services, this report **BE RECEIVED** for information.

## PREVIOUS REPORTS

None

## BACKGROUND

At its meeting held on April 12, 2011, the Community and Neighbourhoods Committee (CNC) requested information regarding the current condition of the Bruce Nuclear Power Plant. A number of specific questions were asked and we provided for Committees information the response from Bruce Power.

**Discussion**

**How often is the plant checked, updated and reported on and how do we obtain public information regarding the status and the performance conditions of this plant?**

> *In order to meet the legal requirements of the Nuclear Safety and Control Act (NSCA) and Nuclear Safety and Control Regulations, all licensees, including Bruce Power, must implement programs that provide adequate provisions for protection of the environment, health and safety of persons, maintenance of national security, and the measures required to implement Canada's international obligations. As a condition of our licence we perform continual checks and upgrades on our systems to ensure the safety of the plant.*
>
> *Staff from the industry's regulator, the Canadian Nuclear Safety Commission (CNSC), monitor our operations and ensure we comply with all the conditions of our licence. The CNSC performs an annual assessment of the safety performance of nuclear power plant licensees in the Canadian nuclear power industry which is available to the public on the CNSC website www.nuclearsafety.gc.ca.*

Assessments are based on the legal requirements of the NSCA and regulations as well as the conditions of operating licences and applicable standards.

**Are there secondary plans for emergency cooling procedures in place?**

*In the unlikely event of a loss of all power, our plant's emergency power supply (EPS) would power nuclear safety-related systems needed to control, cool and contain the fuel. The EPS is seismically and environmentally qualified and has sufficient fuel stores to operate unaided for a seven-day period. Additional fuel is kept on site as a further backup and we could secure more fuel from offsite if necessary. The EPS is similar to other standby generators but is remotely located from them to reduce chances of it being disabled by the same incident. Cables and control equipment involved in switching the EPS into service are routed through areas that are considered to be at lowest risk of damage. In the even more unlikely event that EPS systems also becomes unavailable and all power is lost, our reactors would safely shut down and stabilize using CANDU's convection cooling system design. Then, all units would be placed in guaranteed shutdown state until power was restored.*

**What is the emergency response plan for an accident there, for example under extreme weather conditions?**

*As part of our Operating License, Bruce Power maintains a robust and multi-faceted emergency response program.*

*This includes an award-winning security service, a fully equipped fire department, ambulance service and emergency response organization capable of round-the-clock response. We have two fire pump trucks that can provide an external source of water to station fire water systems which, in turn, are used as an emergency cooling water source for critical systems. In the unlikely event of an emergency, we also have an Air/ Light truck that can remotely provide self contained breathing apparatus for site staff.*

*The effectiveness of our emergency response program is continuously assessed through a series of drills and exercises. Every year, we run at least 41 drills and one major exercise that are evaluated by our regulator, the Canadian Nuclear Safety Commission, which has consistently rated our capabilities as fully satisfactory.*

*Every five years, we also participate in a Provincial Nuclear Emergency Drill that is led by Emergency Measures Ontario and tests not only our own emergency plans, but the Municipal Emergency Plan as well.*

*The Community Emergency Management Co-ordinator for Kincardine maintains a call-down list for all households (approximately 35-40) within a three kilometre radius of the site perimeter in case action, such as sheltering or evacuation, is necessary. The area is also served by warning sirens and people in this zone are provided handouts on the required response and reminded of those actions each year.*

*In light of the events at the Fukishima Nuclear Power Plant, we are undertaking a review of our design safety case and will be paying particular attention to our ability to withstand natural disasters such as fire, flood, seismic events, explosions and blackout conditions.*

*This is not new for us. We had to withstand the blackout of 2003, when our plants were disconnected from the grid and had to support themselves without any offsite power. In that case, our plants not only passed this test, but were available to quickly restore power to Ontario after the event itself.*

*We are also an industry leader in the development of Severe Accident Management guidelines, which are a set of procedures designed to test the plant's ability to cope with events that would be considered to be beyond the plants design basis.*

*Against this backdrop, we are well positioned to demonstrate that our plant can be relied upon to operate safely in the unlikely event that we are challenged by an unprecedented natural disaster.*

*The events at Fukushima will change the face of nuclear power operations in the same way that the events of the Sept. 11, 2001 terrorist attacks in the United States changed the way we conduct our security operations here at the site. The full scope of changes that our industry might see cannot be stated at this time, but we are certain that changes will come and we, at Bruce Power, will ensure that we can quickly respond to new requirements.*

**How is this incorporated into the City's emergency response plan?**

*Municipalities in close proximity to, or with nuclear establishments within their boundaries, should include in their emergency response plans the measures they may need to take to deal with the off-site consequences of a radiological accident. This would include details on the relevant notifications to/from the involved organizations (see PNERP Implementing Plan for Other Radiological Emergencies).*

*ii. Other municipalities which have a radiological incident identified as one of their potential risks, within their Hazard Identification & Risk Assessment (pursuant to Section 2 (3) of the EMCPA), should include, within their municipal emergency 12 response plans, the measures they may need to undertake to deal with such an emergency (see PNERP Implementing Plan for Other Radiological Emergencies).*

*Designated municipalities preparing plans in respect of a nuclear emergency include:*

- *municipalities located within nuclear primary zones.*
- *municipalities acting as a host community.*

**How are we and the surrounding municipalities, kept apprised of changes in conditions?**

*The provincial government has jurisdiction over public health and safety, property and the environment within its borders. In the event of a nuclear and/or radiological emergency, the province will be primarily responsible for managing the off-site consequences of the emergency, by supporting and coordinating the offsite response, and for directing the off-site response to those emergencies as detailed in this Plan.*

**What is the reporting time under the emergency conditions for evacuations here and including our neighboring municipalities?**

*During an emergency, the Premier or a minister (delegated) is required to regularly report to the public with respect to the emergency.*
*The Premier is required to submit a report in respect of the emergency to the Assembly within 120 days following the termination of the emergency. If the Assembly is not in session at that time, the Premier is required to submit a report within 7 days of the Assembly reconvening.*
*The full nuclear emergency response plan can be found here:*
*http://www.emergencymanagementontario.ca/stellent/groups/public/@mcscs/@www/@emo/documents/webasset/ec077892.pdf*

**What is the life expectancy and how will the plant be decommissioned or upgraded in the future?**

*Mid-life refurbishments are nearly complete on Bruce A Units 1 and 2 which will extend the life of the site for at least another 25 years. Similar refurbishments are being examined on the remaining units which would extend the site horizon even further. The province of Ontario continues to depend on Bruce Power to provide 6,300 megawatts of electricity which is roughly 25 per cent of the provincial demand for power.*

Information in this report was received and compiled by Pam McClennan.

| **REVIEWED & CONCURRED BY:** |
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| **PAT MCNALLY, P.ENG.**<br>**EXECUTIVE DIRECTOR OF PLANNING, ENVIRONMENTAL AND ENGINEERING SERVICES** |

c.c. John Peevers, Investor and Media Relations, Corporate Affairs, Bruce Power
Dave O'Brien, Corporate Security and Emergency Management