



**SOCIETY *of*  
UNITED PROFESSIONALS**

**Submission to the  
Canadian Nuclear Safety Commission**

**for**

**REGDOC-1.2.1 Guidance on Deep Geological Repository Site  
Characterization**

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## **Executive Summary**

The Society of United Professionals (“the Society”) seeks to provide comments on a new draft regulatory document, REGDOC-1.2.1, Guidance on Deep Geological Repository Site Characterization.

## **Introduction**

The Society of United Professionals (formerly known as The Society of Energy Professionals) represents more than 8,600 employees working for 15 employers in the energy and legal industry in Ontario. Our members’ employers include AMEC-Nuclear Safety Solutions, Brookfield, Bruce Power, Electrical Safety Authority, Hydro One, Independent Electricity System Operator, Inergi, Kinectrics, New Horizon System Solutions, Nuclear Waste Management Organization, Ontario Power Generation, Ontario Energy Board, Toronto Hydro, Legal Aid Ontario, Toronto Chinese and Southeast Asian Legal Clinic and the National Judicial Institute. Approximately 4,400 Society members are employed in our nuclear divisions with Bruce Power having approximately 1,200 members.

Our members are employed as first-line managers and supervisors, Control Room Shift Supervisors, Simulator Trainer / Examiners, professional engineers, scientists, information systems professionals, economists, auditors, accountants, and lawyers, as well as many other professional, administrative, and associated occupations. We are problem solvers, experts, and innovators. Our principles are the beliefs that guide our decisions and are the backbone of all of our actions and communications. As a union, we stand behind our members’ professionalism, integrity, and commitment to excellence in all areas, particularly workplace safety, public health and environmental sustainability.

Our members bring a strong independent voice that is part of the broader labour movement and civil society, where we leverage our expertise and resources to create meaningful change in our workplaces and our communities. Our independence is bolstered by membership in Canadian Labour Congress, Ontario Federation of Labour, and various labour councils, the Canadian Nuclear Workers Council, and the International Federation of Professional and Technical Engineers. Just as importantly, our leadership team has forged regular, direct communication with CNSC staff at each nuclear facility

At Ontario nuclear plants our members provide technical expertise in areas of conventional health and safety, radiation safety, emergency preparedness, and environmental protection. Society-represented safety sensitive occupations include ergonomists, safety specialists, industrial hygienists, safety officers, health physicists, emergency response managers, environmental scientists, and environmental engineers.

Approximately 90% of our membership hold post-secondary degrees and diplomas, with 70% of our members having degrees at the Bachelor’s, Master’s or Ph.D. levels. Society members are knowledge workers who take great pride in exercising their civic, social and professional responsibilities.

The Society is pleased to provide comments on REGDOC-1.2.1, which provides guidance on site characterization of a deep geological repository facility for radioactive waste. We have a demonstrated interest in this and related issues as the Society has intervened in every CNSC license hearing related to Bruce Power, Darlington Nuclear and Pickering Nuclear. We have also been intervenors for the proposed Deep Geological Repository by Ontario Power Generation and provided comment on proposed CNSC regulations as required.

## **Section 1: Introduction**

The requirement to work with municipalities and provincial agencies is laudable. However, there is a need to balance an inclusive process with one that is effective. The requirement to ensure the proponent works through all identified issues with municipalities and provincial agencies may cause undue delay and create more complications than expected.

## **Section 2: Overview of the Siting Process**

It is crucial that siting be guided by science and facts rather than unfounded opinions. The four stages to the siting process for a DGR are stated as:

1. a conceptual and planning stage: desktop data compilation and interpretation
2. a survey stage: regional mapping and screening
3. a site characterization stage
4. a site confirmation stage

These appear reasonable and logical and provide a good process to work through to get to the right answer.

## **Section 3: Site Characterization Program**

The Society agrees with the requirements in Section 3 for good baseline data to allow for future measurement against this baseline to ensure appropriate monitoring that prevents negative outcomes. Moreover, the Society agrees with the importance of the geological environment work required through this process and the factors identified in sections 3.1.1 to 3.1.5.

### **Section 3.1: Site characteristics I: geological environment**

The last bullet in the first paragraph states: “low potential for inadvertent future human intrusion.” It is unclear as to why only “inadvertent” human intrusion is specified. Premeditated and planned nefarious human intrusion will have more serious consequences. Much of the consequences will depend on site location, geology and DGR design. If properly located and designed with such an incident in mind, the incentive for nefarious human intrusion may be minimized or eliminated.

### **Section 3.2: Site characteristics II: surface environment**

The items identified in Section 3.2 are all reasonable and important issues that are required to help confirm the suitability or the non-suitability of a site. All of the technical items listed in Sections 3 are important and these should be carried out by professionals trained in each of these areas.

### **Section 4: Human Activities and Land Use**

The use of the site by humans in Section 4 is reasonable and important as part of the requirements for a site.

### **Section 5: Data Acquisition and Verification Activities**

The description of management systems in Section 5 are an important part of this REGDOC. The Society supports producing high-quality data through this process and proposes that this data should be made available to other parties to review and challenge to ensure an open and transparent process. The Society also supports data sampling that is conducted by professional workers to ensure a high quality of work. Further, we support making the results of this work available to experts to review and confirm it is correct.

The Society agrees that it is important that the interpretation of the data and results is conducted by professionals with appropriate credentials and expertise to ensure a high-quality result.

### **Section 2.4 / 6: Underground Research Facility**

The Regulator has shown its preference for the DGR to have an Underground Research Facility (URF) for the purpose of obtaining verification of the Safety Report. The Society believes that the Regulator should not prescribe the DGR design to have an URF. Rather, it should set criteria for the design to meet the safety requirements and leave the proponent to demonstrate whether an URF is required.

In the AECL conceptual design for a DGR (Nuclear Waste Management Program), the design did not have an URF and was found to meet safety requirements by the Review Panel in 1996. The URF was not a requirement to prove safety. The Society contends that sufficient information can be gathered through site characterization and facility engineering design to meet the facility safety requirements. Also, the CNSC should consider other approaches for a DGR design that are not currently formulated and can do without an URF.

### **Closure**

The Regulator has created this REGDOC assuming that the safety of a DGR cannot be ascertained until closure takes place. As such, the license to approve a site and license construction appears to be a conditional license that depends on further research work until closure is granted. Such an

approach creates the impression that certainty of design cannot be achieved and therefore increases the uncertainty and the risk of escalating costs when building a DGR.

In Section 3.1, Para. 4, where it stated that: “As siting progresses, more extensive geological information would be gathered to verify the initial safety case and to update the safety case iteratively....it should be noted that data collection would continue until closure of the DGR, and possibly for some time after closure, in order to verify and update the safety case, and, demonstrate long-term safety is maintained.” This kind of approach reinforces the inappropriate perception that nobody can guarantee the safety of a site and that safety can only be achieved by iteration of the safety case ad infinitum. This lack of confidence in the site characterization process undermines the process of siting a DGR. The Society believes that the CNSC should state criteria for Site Characterization that must be met to achieve safety of a DGR.

## **Conclusion**

Overall, the requirements are thorough and will ensure significant oversight when evaluating sites.

The Society of United Professionals would like to thank the CNSC for the opportunity to submit our written comments.

All of which is respectfully submitted.

Scott Travers,  
President

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