ARC NUCLEAR CANADA, INC.

ARC Nuclear Canada Inc.'s Supply Chain Event

Hosted by

Canadian Manufacturers and Exporters

November 24th, 2020

Questions & Answers

For further information on this document and its content please reach out to the following email: fzeuchner@arcnuclear.com

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Canadian Manufacturers and Exporters (CME) hosted ARC Nuclear Canada Inc.'s (ARC Canada) Supply Chain Event on Tuesday November 24th, 2020. During this event, participant's questions were recorded and have been provided below along with ARC Canada's response.

Please note that the following information contained within this document represents, or is based upon, forward-looking projections or similar predictive information. ARC Canada believes that such projections and information are based upon reasonable estimates and assumptions. However, various factors could cause actual results and the performance to differ materially from those stated.

1. **In your discussions earlier, you noted a "binning exercise" that considers the advancement of the project. Could you describe the timelines associated with the "Co-op Approach" versus the "Manufacturing Facility Approach"?**

   The "Co-op approach" is the term currently being used to describe the necessary manufacturing and supply chain buildout to support the construction of the First of a Kind (FOAK) which is estimated to start construction in the mid 2020's once the necessary provincial and federal approvals are obtained. In the case of the "Manufacturing Facility Approach", this term is currently being used to describe the necessary manufacturing and supply chain buildout to support the implementation of the full manufacturing facility required for future sales of the ARC Canada technology in the Province, Canada, and the World. In the latter case, these sales are known as Nth of a Kind (NOAK) and the timeframe associated with this approach is expected to be more in the late 2020's, early 2030's.

2. **You noted that ARC Canada staff intends to review each companies' submission from a perspective of "Skills and Abilities". Could you expand on how a company could ensure they have the information your staff needs?**

   In the next step of commercialization, ARC Canada begins its second phase of Supply Chain analysis to understand the New Brunswick capabilities and the support required from other provinces. As system components are more precisely defined, it is the intent of ARC Canada to compare requirements to the New Brunswick & Atlantic Provinces capabilities as a priority, while determining the ability to manufacture at cost competitive pricing.

   In general, ARC Canada Subject Matter Experts will review currently available information sent to ARC Canada from companies who are interested in getting involved in the existing opportunity. This will ensure that those companies have the opportunity to respond to any

future "Request for Proposals". As such companies, are requested to forward relevant information describing the work that they are currently performing, or types of work that they are interested in developing, to the following email: fzeuchner@arcnuclear.com

3. **You noted that the manufacturing facility could possibly be built in one of several areas across New Brunswick. Do you consider the decision to construct a short-term or longer-term decision?**

   In the case of the decision to implement a "Manufacturing Facility" to support the implementation of the full manufacturing of the ARC Canada technology for sales in the Province, Canada, and the World, it is considered a longer-term decision, most likely in the late 2020's or early 2030's.

4. **Could you expand on the possible next steps for ARC Canada with regards to the supply chain?**

   In the next step of commercialization, ARC Canada begins its second phase of Supply Chain analysis to understand the New Brunswick capabilities and the support required from other provinces. As system components are more precisely defined, it is the intent of ARC Canada to compare requirements to the New Brunswick & Atlantic Provinces capabilities as a priority, while determining the ability to manufacture at cost competitive pricing. This comparison or analysis will lead to local supplier-based Capability Assessment which will provide ARC Canada valuable information in its efforts to identify and prioritize suppliers from New Brunswick & Atlantic Provinces.

5. **Why are you engaging New Brunswick Suppliers first rather than just utilizing the existing Supply Chain?**

   This is a question that is asked frequently. ARC Canada has one of its corporate core objectives to foster local economic growth opportunities with Indigenous peoples and New Brunswicker's. ARC Canada also recognizes the importance of the 2018 New Brunswick partnership which included investment in the Province's future. Further, our outreach efforts in New Brunswick have convinced us that the Province has the depth of support in the general population, in the business community and in the political leadership needed to see this effort through to success. From our work to date, we believe that the supply chain will be ready, the work force is willing, and the Province's political leadership is committed.

6. **References are made to what can be done in Canada & NB now and what will be done elsewhere. Why can't the "other" also be done by Canadian (NB) supply chain? Is there sufficient time to "gear up" for some?**

   ARC Canada has performed a preliminary review of 17 areas to determine the potential of meeting the supply chain within Canada. Our analysis indicates that 74% of all the components and systems required could be supplied by the Canadian supply chain. In the first phase of the supply chain analysis, comparisons were done based on the existing engineering details available at that time for the ARC Canada technology. Further, the comparison to the Canadian supply chain assumed no investment made within Canada for activities required for the manufacturing of various systems and components of the ARC Canada Technology. As such, there is tremendous potential for growth within New Brunswick, the Atlantic provinces and Canada. However, it is also known that most likely some systems and components are not within the means of the current Canadian capabilities.

7. **Based upon real world timing, what is the timing of when the supply chain would be engaged, both for the FOAK plant & recurring plant(s)?**

   In the next step of commercialization, ARC Canada begins its second phase of Supply Chain analysis to understand the New Brunswick capabilities and the support required from other provinces. ARC Canada intends to have the next phase of the study completed by mid to late 2022, with possible engagement with supply chain partners at that time. However, in these troubling times, the gathering of key data will pose an increased level of difficulty for the analysis and most likely will cause some level of delays.

8. **Has your market analysis demonstrated that there is room in the marketplace (both Canada & global) for all the SMR players?**

   There are at least three potential applications for SMRs in Canada; on-grid, heavy industry, and remote communities. Each of these have different energy demands and it is understood that it is not likely that a single design could meet all these needs. As such, the Province of New Brunswick has seen the potential market value and economic impact associated with the development of the on-grid technology. The Province of New Brunswick has determined, through its own analysis, that the demonstration and deployment of the ARC-100 technology could lead to the Province being a key player in the export market as it will help create jobs and bolster its energy security.

Similar analysis by ARC Canada for the Canadian market has determined that many units could be constructed over the next three decades in the provinces of New Brunswick, Ontario, Saskatchewan, and Alberta, supplying much needed emission free electricity or emission free heat sources, while dealing with waste. At the world market level, ARC Canada believes that the ARC-100 technology could capture as much as 20% of the total worldwide SMR Market which would mean many more units built.

9. **How does Advanced Manufacturing technology factor into the business case for SMRs?**

   ARC Canada believes that several Advanced Manufacturing processes have the potential to reduce manufacturing costs and as such could be exploited as it builds out its supply chain needs. By working with Canadian manufacturers, technology providers & researchers, new developments can be used to input into the Canadian Regulatory "safety case" leading to manufacturing and modularization production efficiencies. In conjunction with new "Power Plant" technology developments, ARC Canada believes it is imperative that lowering production cost through technology advancements is critical to making SMRs economically viable.

10. **What does the Canadian nuclear supply chain need to do immediately to ensure it remains competitive for the long term?**

    In the case of this question, the answer will limit itself to the ARC Canada supply chain initiatives. The Province of New Brunswick has determined, through its own analysis, that the demonstration and deployment of the ARC-100 technology could lead to the Province being a key player in the export market. However, to succeed, a company needs to reflect on the products that they will produce and ensure they maintain a competitive advantage from creation to delivery phase. Since many of the products associated with the ARC Canada technology could be new additions to a supplier's repertoire, strategic investment in advanced manufacturing could provide a competitive edge.

11. **How many people would be required to maintain (daily operations & maintenance) a SMR and what degree of qualifications are needed?**

    The ARC Canada technology has a proven inherent reactor safety characteristic that results in fewer systems and component requirements. This contributes to lower cost to construct, operate, and maintain, including a significant reduction in the license personnel training programs.

This natural ability to control its own power without human intervention also provides exceptional load following characteristics offering energy flexibility and versatility to partner with renewables. This flexibility and versatility, combined with its 20-year fuel cycle, provides a much simpler operational and maintenance approach than the current generation of nuclear power plants. In many aspects, the ARC Canada technology resembles more a conventional power station and support infrastructure.

The Full Time Equivalent (FTE) staffing is currently estimated to be only one tenth of the current generation of large nuclear power plants staffing, with staff having a variety of qualifications in trades, engineering, HR, security, etc. Also, one needs to consider the Full Time Equivalent staffing for the "fleet approach" currently being developed which would be a supporting function to the Canadian and worldwide fleet of the ARC Canada technology. This creates additional employment opportunities above the operational, construction and supply chain employment.

12. **What progress has been made to obtain federal funding for SMR development?**

    ARC Canada continues to work closely with all levels of governments. Progress continues in this area with a decision expected soon.

13. **Why 15 years to full market when ARC Canada is "Ready for Market"?**

    The ARC Canada Commercialization Program takes a phased approach to lead-plant deployment in New Brunswick. This approach levers the Canadian two-step licensing process to rapidly lower Program risk with reasonable incremental capital requirements. With New Brunswick in need of additional power for its electrical grid in the late 2020's, construction of the first ARC-100 unit could begin in 2025 - 2026 which would generate early revenue opportunities for the Province and Canada. Once the first unit construction is underway, it is assumed that more units will be scheduled to be built throughout Canada. As such, a portion of the New Brunswick manufacturing sector could be required as early as late 2022 and market development in early 2030's.

14. **Nuclear requirements N285 & N299 vs. ASME Sec. III?**

    The ARC Canada technology is based on a proven inherent reactor safety characteristic, which is known as the "self-regulating of power". This is due to a strong negative coefficient of reactivity with temperature increase which reduces the likelihood of the occurrence or progression of accidents scenarios. As such, ARC Canada is developing its technology using

non-traditional deployment models. Its design uses modular construction approaches to ensure transportability and includes important areas into its design such as security and proliferation. The ARC Canada design work ensures that the ARC-100 technology meets the highest of safety standards. This includes the implementation of approximately 100 codes and standards from the Canadian Nuclear Safety Commission (CNSC), the Canadian Standards Association (CSA) and the International Atomic Energy Agency (IAEA). The design requirements are cross-reference to codes and standards such as ASME, N285 and N299 to ensure applicability and to determine if any gaps need to be addressed.

15. **What key steps should a potential NB supply chain partner take today to get involved?**

    The first key step for potential NB companies would be to forward relevant information that describes work that they currently perform, or types of work they are interested in developing, to the following email: fzeuchner@arcnuclear.com

16. **Can ONB streamline the process or otherwise help to identify possible supply chain players?**

    ARC Canada has been in continuous discussions with Opportunities New Brunswick (ONB) and other organizations and groups such as the First Nations, Canadian Manufacturers and Exporters, and the Conseil Économiques du Nouveau Brunswick to ensure Indigenous Peoples and New Brunswick Companies have every opportunity to engage in this economic growth opportunity.