About Nordion

Nordion is a health science company that provides mission-critical radioisotopes used for the prevention, diagnosis and treatment of disease.

Delivering quality products to our global customers for more than 70 years, our product portfolio includes:

- Sterilization Technologies
- Medical Isotopes
Nordion’s Global Footprint

Approximately 350 employees

Around 30 products

Supply over 350 customers

Across more than 45 countries
About Sotera

**Sotera Health** brings together **Sterigenics, Nelson Labs and Nordion**, each of which are established, highly reputable players in the global health arena.

*Working as a team, Sotera Health and its companies have one common goal: **Safeguarding Global Health.**™*

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**More than 2600 Employees**

**Serve over 2500 Customers**

**Across 13 Countries**
Importance of Co-60

- Used to sterilize 45% of all single-use medical supplies and devices
  - Sutures, catheters, syringes, heart valves, artificial joints, gloves.
  - Enhancing food safety and preservation (spices, fruit, vegetables, etc.)
  - Destroying e-coli
  - Packaging treatment
- Used in 45,000 Cancer Treatments Per Day in >50 Countries
Medical Isotopes

Diagnosis and Treatment of Disease

Reactor Isotopes:
• Bone, Lung, Liver Scans
• Cancer Diagnosis
• Prostate, Thyroid, Non-Hodgkin’s Lymphoma Cancer Treatment

Cyclotron Isotopes:
• Heart, Thyroid, Coronary Artery Disease Diagnosis
• Cancer and Infection Diagnosis
• Prostate Cancer Treatment
2016 /2017 Milestones and Highlights
2016 Milestones and Highlights

• 2016 was a milestone year for Nordion – we celebrated our 70th anniversary as a company.

• REVISS Services (UK) Limited is now Nordion UK

• Bruce Power signed a landmark contract extension that will see a stable and secure source of cobalt supply from the four Bruce B CANDU reactors to 2064.

• Nordion secures long term supply of HSA with Bruce Power to replace the Chalk River supply in 2019.
  ➢ HSA cobalt is being produced at the National Research Universal (NRU) reactor in Chalk River, but will cease operation in 2018
2017 Milestones and Highlights

• C-TPAT Tier III / PIP Revalidation April 2017
  ➢ Tier III status (only top 2% of member organizations achieve this status)

• University of Missouri Research Reactor Files for NRC Approval to Start U.S. Production of Medical Isotopes
  ➢ MURR’s license amendment request submitted to NRC
  ➢ Marks a crucial step towards implementing domestic U.S. production of molybdenum-99 (Mo-99)

• University of Guelph, Bruce Power and Nordion team up for research project using Cobalt-60
  ➢ High-tech form of insect birth control connected to nuclear power could solve a devastating pest problem for Ontario farmers
Nordion Global Logistics

Compliance
Safety
Security
Nordion Global Logistics Overview

- Raw material and finished products moved globally
- Shipping Co-60 for >50 years
- >1B curies Co-60 shipped; typically 400KCi + per shipment
- Highly regulated
- Multi-modal; highly regulated; transport / customs
- Philosophy is dual coverage to all key markets
- Complex export and import approval process
- Long-term supply chain relationships
  - Recognizing the benefits that can be achieved by partnering with strong partners in our supply chain.
Nordion Global Logistics Overview

- Professional relationships and memberships
  - C-TPAT (June 2005) – Tier III
  - PIP (October 2012)
  - Transport Canada (Known shippers and Air Cargo Security Program)

- Participating in Industry Associations
  - Nordion participates and plays a leading role in certain international and North Logistics and Transportation associations (TFWG, CVSA, IATA)
Challenges in Class 7 Transport

• Carrier delay or denial of shipments
  ➢ Few marine carriers which accept Class 7 Cargo
  ➢ Difficulty reaching or delay to deliver to global customers

• Ocean Port Transshipment approval and permits
  ➢ Limited ports which handle Class 7 Co-60 shipments
  ➢ Extraordinarily long review and port permit issuance time, which requires Nordion to delay Co-60 shipments and re-book

• Ever changing regulatory environment
  ➢ Multiple layers of regulations, with differing and extra escort fees per State
Challenges – Ocean Carrier and Alliances between 1992 – 2017

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<tr>
<th>Year</th>
<th>Carriers/Alliances</th>
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<td>1992</td>
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** Excerpted from LinkedIn_ The puzzle of shipping alliances by Lara Mouftier and Ricardo J. Sanchez.**

** Modified to show 2017 carrier alliances.**
Cobalt-60 - Packages (F-168)

- Finished sources are transported to gamma sites in licensed containers
- Packages licensed by Canadian Nuclear Safety Commission and other competent authorities (NRC, DOT, etc.) internationally
- Designed and tested to meet all international standards and regulations
Medical Isotopes – Transported in Type A & B Packages

- Type A packages for shipping smaller amounts of medical isotopes, such as individual formulations
- ~80% of all medical isotope shipments shipped in Type A

- Type B(U) container can weigh 125 kg - 167 kg.
- Shipping I-131 and molybdenum-99, used ultimately in some 80% of all nuclear medicine or diagnostic scans.
Shipment Tracking
Tracking by Ocean Carrier Websites

Example CMA CGM Shiptracking
Tracking by Vessel Finder
Questions?

Find out more at nordion.com
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