

Fission Impossible

<u>Team Member Name</u>	<u>Year</u>	<u>Major</u>
Taylor Schoolcraft	2026	Management
Carsyn Katzenemeyer	2027	Marketing
Brionna Grapeson	2028	Accounting
David Rabalais	2026	Finance

Advisor(s): Dr. Daria Panina

Topic Title: Public Perception of Nuclear Energy: Overcoming Barriers to Sustainable Growth

Audience: Waste Control Specialist Board of Directors

Sustainable Development Goal

SDG 7 – Ensure access to affordable, reliable, and clean energy for all

SDG 12 – Ensure sustainable consumption and production patterns

Executive Summary

As global electricity demand continues to rise, fueled by population growth and the rapid advancement of technologies like AI, the need for sustainable, low-emission energy sources becomes more urgent. Nuclear power stands out as a key player in this energy transition, offering a low-carbon alternative to fossil fuels, especially to power the data centers driving innovation and progress within our nation. However, this solution comes with an equally significant challenge: nuclear waste disposal. While nuclear energy generates substantial power, its radioactive byproducts remain hazardous for thousands of years, posing severe health and environmental risks. The ethical dilemma is compounded by the growing opposition to nuclear waste storage in local communities, notably in regions like West Texas, where residents have firmly declared “not in my backyard.” Now, as a nuclear waste management case approaches the Supreme Court, the challenge is clear—how can the US safely and sustainably manage nuclear waste without jeopardizing public health or environmental integrity to positively shape public perception of nuclear energy?

After careful evaluation, Fission Impossible Consulting proposes that Waste Control Specialists partner with the Department of Energy (DOE) to establish a new geological underground repository within the salt formations of the Permian Basin. This approach responds to the legal opposition and mixed public support surrounding their current temporary storage system in dry casks above ground. Drawing inspiration from Finland's Onkalo waste management system, the proposed repository would securely store nuclear waste in stable geological formations, minimizing the risk of contamination to human populations and ecosystems. Finland's approach serves as an example of how such a geological system can effectively address the long-term storage challenges of nuclear waste. This approach not only addresses the technical challenges of safely storing nuclear waste but also seeks to enhance public perception of nuclear energy, specifically in the US.