Emerging Issue #RAS-7: Global Supply Chains and Fuel Reliability

Emerging Issue	Item	Specifics
Horizon	**Number of years**	On-going and beyond
Status	**Emerging or Standing**	Emerging
	Technical Group	None
Background	**Description**	Supply chains are used in almost every industry to coordinate sourced resources from supplier to customer. Supply chains are systematic, incorporating a series of organizations, people, technology, activities, and information. Risk management theory tells us that supply chain disruptions are a function of the vulnerabilities associated with a given chain. Furthermore, vulnerabilities are a function of chain length and weakness—the more "chains" there are in the supply chain, the greater the likelihood there may be for a disruption; consequently, the weaker the "chains" are, the greater the likelihood there may be for a disruption. Reliance on global supply chains for fuel and other products used to generate electricity must be managed with a common goal of reducing the risk of a prolonged disruption. The electric industry has a reputation for being risk adverse; therefore, discrete or short disruptions in the supply chain are less likely to cause great issue—operational and strategic plans are often put in place to deal with a low occurrence event. However, large and prolonged supply chain impacts could disrupt the ability for a given power plant, or group of power plants, to produce electricity and, therefore, cause significant reliability concerns. Of specific concern are global supply chains that are made up of weak chains (e.g., political uncertainty and instability, war stricken states, weak ties to North American foreign affairs). Currently, there are two known supply chains of specific concern to the electric power industry: 1) scarcity of rare earth metals for nuclear generation[1] and 2) liquefied natural gas imports from the middle east.
	What changes during the 10-year horizon?	Fuel quality/availability for electric generators; potential for disruption or inability to acquire fuel and/or other supplies
	What is the impact to regional reliability?	Prolonged disruptions could impact the ability of multiple generators to produce electricity.
Assessment Factors	**Resource Adequacy Considerations** [Yes/No]?	Yes. Prolonged disruptions could impact the ability of multiple generators to produce electricity.

1

	Transmission Adequacy Considerations [Yes/No]?	No.
	Resource Siting Impacts [Yes/No]?	No.
	Operations Impacts [Yes/No]?	Yes. Prolonged disruptions could impact the ability of multiple generators to produce electricity.
	Remaining Uncertainties	• Availability of supplies • Domestication of supplies • Energy security policies