

## Case Study User Guide

This User Guide was developed to help you use the various safety culture case studies more effectively, providing you with a better understanding of what safety culture is and how it applies to you, whether you are an NRC employee interacting with an external stakeholder, an NRC licensee, an Agreement State regulator, an Agreement State licensee, a vendor or contractor employee, an organization interested in the safe and secure use of nuclear materials, or a member of the public with that same interest.

### What is safety culture?

There are various definitions of safety culture. Most focus on the idea that where there is a positive safety culture, individuals and organizations emphasize safety over competing goals such as production or costs, recognizing that the activities in which they engage could have serious consequences if they are not conducted with a safety-first focus. The NRC's Safety Culture Website at <http://www.nrc.gov/about-nrc/safety-culture.html> contains additional information about safety culture, including the definition of nuclear safety culture and the traits of a positive safety culture that were included in the NRC's policy statement.

### Why did the NRC develop these case studies?

The NRC developed the case studies to provide real-life events where review of the circumstances surrounding the events and the results of the investigations found clear examples of the role that safety culture played in contributing to, or lessening, the loss of life and damage associated with the event. The case studies that have been selected for this initiative represent a breadth of industries, including energy, medical, and transportation.

The case studies are learning tools. Those of us that are responsible for regulating or using radioactive material in a safe and secure manner should avoid complacency, and should be open to learning from our mistakes and the problems others have faced in an effort to prevent reoccurrences. Thus, the case studies encourage active learning and can be used to:

- Bridge the gap between a theoretical understanding of safety culture and an understanding of the importance of developing and maintaining a positive safety culture in an applied sense;
- Highlight the significance of safety culture in the analysis and identification of root causes of an event; and
- Enhance safety by raising stakeholder awareness of safety culture and by applying lessons learned.

### How can case studies enhance my understanding of safety culture?

The case studies contain practical, real-life examples that illustrate the nine traits included in the NRC's Safety Culture Policy Statement. Each case study demonstrates the role that safety culture played in a particular event.

### How were the case studies formatted?

The format of the case studies was developed to provide a brief synopsis of an event and highlight the safety culture contributions to its outcome. The information included in these case

studies was taken from official investigative reports that were publicly available when the specific case study was developed. NRC did not conduct any independent investigations of the event unless a particular event warranted direct NRC regulatory oversight. Each case study describes the event that occurred, the information that was reviewed and analyzed, the probable cause of the event as well as the underlying issues or root causes of the event. This information is followed by a section that considers the event details in terms of the NRC's safety culture traits, examining as an example, the relationship between decisions made that led to the event and the NRC's trait "Leadership Safety Values and Actions." Each case study concludes with a section summarizing what can be learned from the event.

### **How can I use the case studies?**

As you read through the case studies, consider the following:

- First, we suggest that you become familiar with the information provided on the NRC's Safety Culture website at <http://www.nrc.gov/about-nrc/safety-culture.html>. This website contains the NRC's Safety Culture Policy Statement, a brochure and additional information about the policy statement, and the Safety Culture Trait Talks.
- Second, focus on the issues that were identified so that you have a good understanding of what happened and where things went wrong or where additional damage was avoided. Some case studies will relay an example where, because of a positive safety culture, more serious problems were avoided. Pay particular attention to the section on the safety culture traits and the role that a positive or weak safety culture played in the outcome of the event. Review the summary so that you have a clear understanding of the important lessons learned from the event.
- Third, you may find the following questions useful for your own consideration or for group discussions:
  1. What could have been done differently to prevent this event?
  2. What impact did safety culture have on the event's outcome, including whether it could have helped to prevent the event all together?
  3. What can I learn from this case?
  4. How does this increase my understanding of safety culture?
  5. How do the lessons learned from this case study apply to my position at the NRC, as a licensee, vendor or contractor employee, as an organization interested in the safe and secure use of nuclear materials, or as a member of the public with the same interest?

### **Who can I contact with a question or suggestion?**

- We look forward to continuing to provide you with information about the importance of a positive safety culture. If you have a question or would like to make a suggestion, please contact the Office of Enforcement, Concerns Resolution Branch staff at [external\\_safety\\_culture.resource@nrc.gov](mailto:external_safety_culture.resource@nrc.gov).