



Russian Nuclear Submarine Accidents Survey

Ole Reistad

Norwegian Radiation Protection Authority

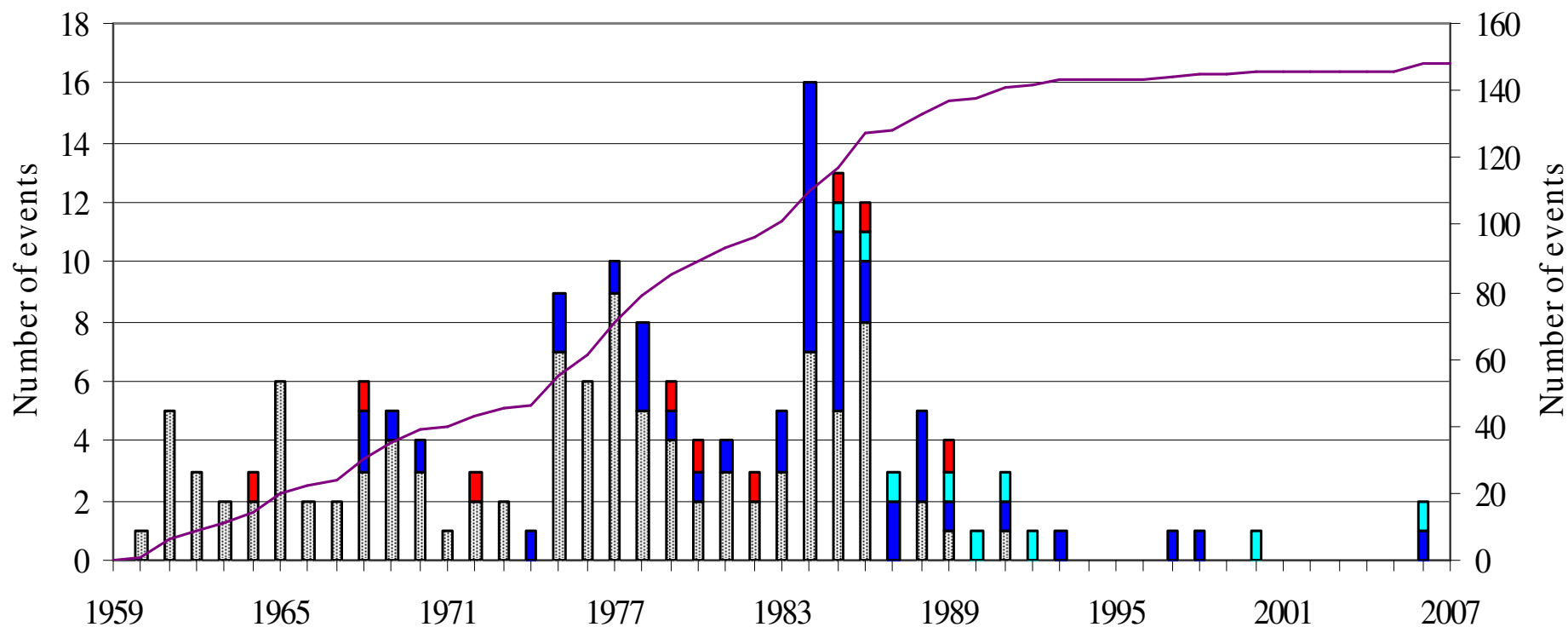
A large, dark-colored Russian nuclear submarine is shown on a shipyard deck. The submarine is positioned horizontally, with its conning tower and various structures visible. The deck is made of metal grating, and there are various pieces of equipment and scaffolding around the submarine. The background shows the structure of the shipyard building.

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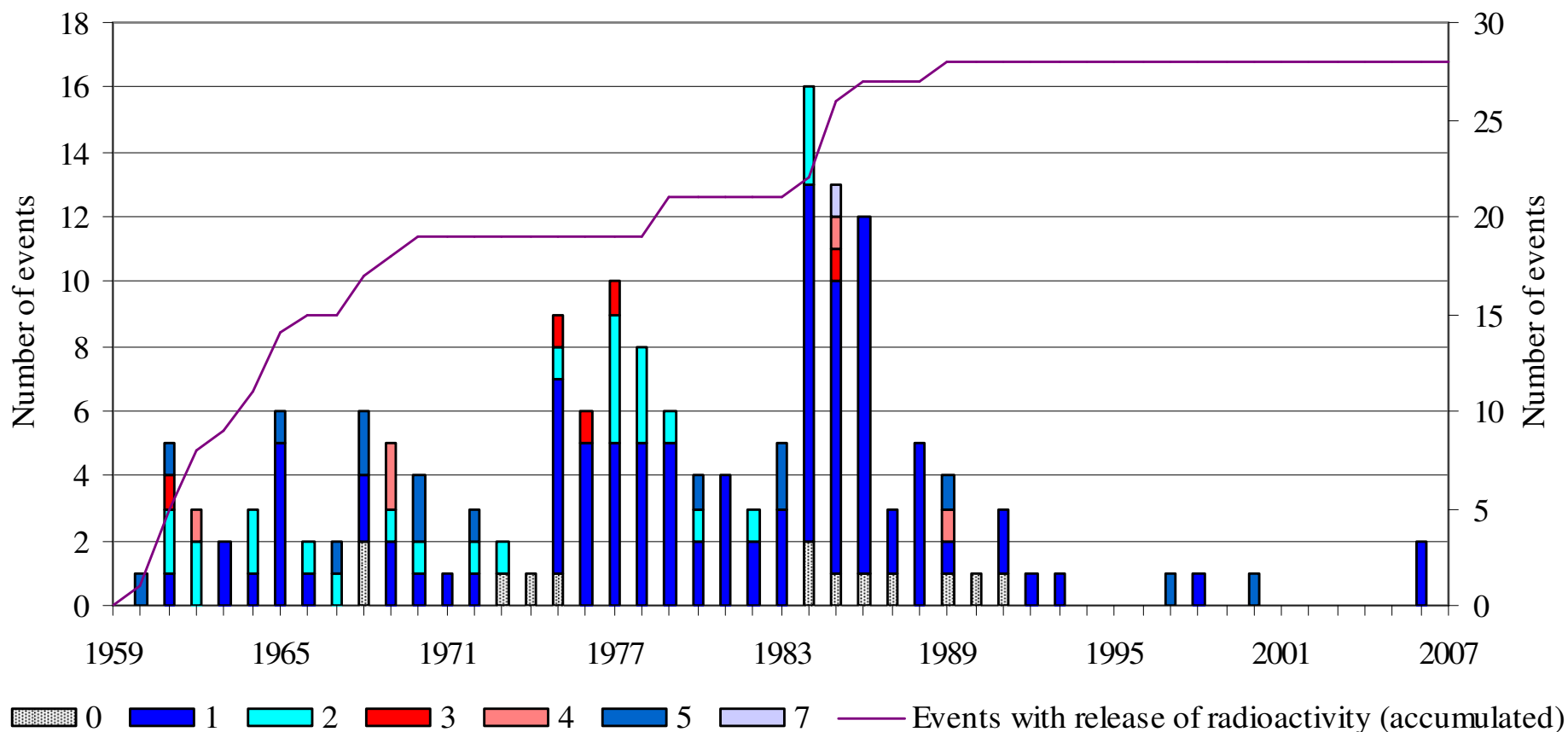
Norwegian Radiation Protection Authority

All safety-related events 1958–2007 (annual/ cumulative (right axis)) distributed by vessel category

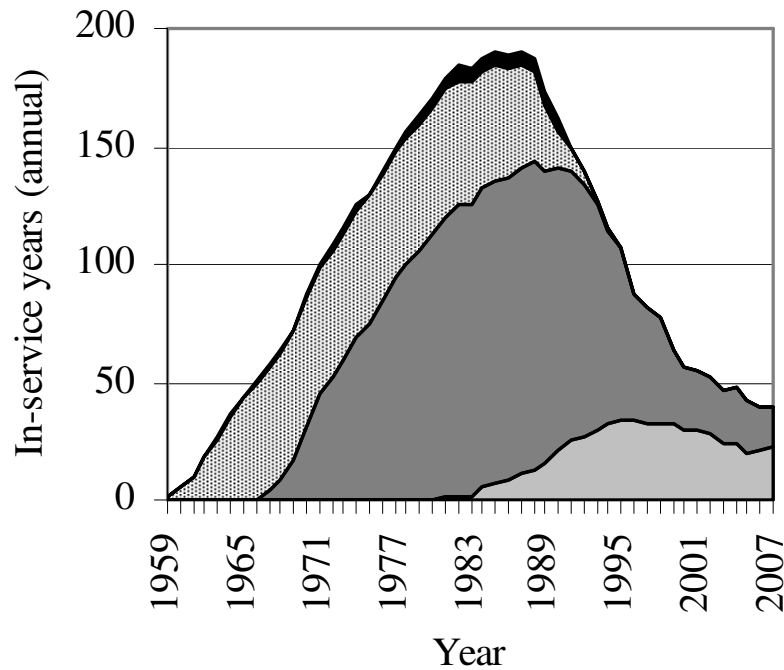


- 1. gen submarines
- 2. gen submarines
- 3. gen submarines
- LMC
- No. of safety-related events (cumulative) (right y-axis)

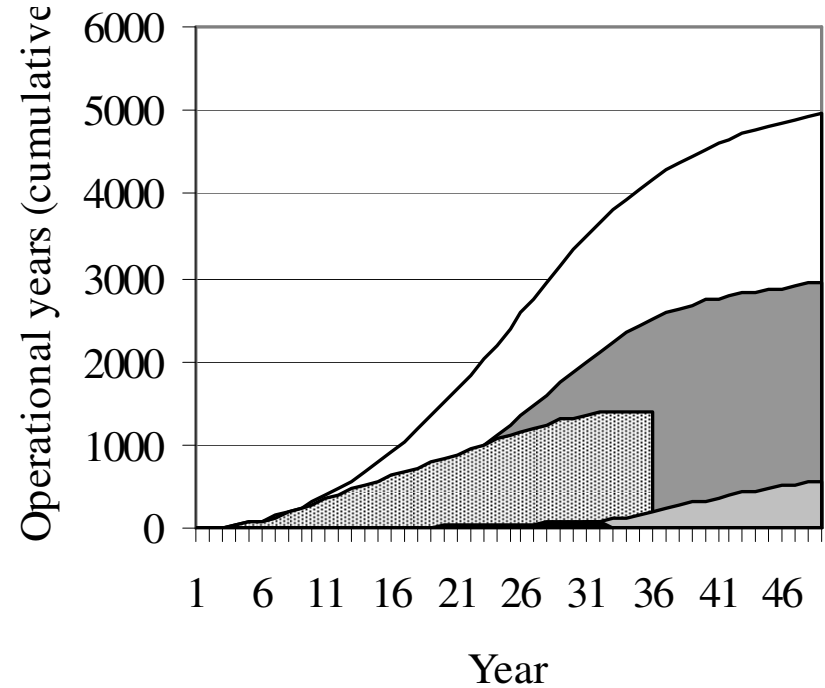
All safety-related events 1958–2007 distributed by safety significance (1–7) (left axis) and events with release of radioactivity (cumulative) (right axis)



Annual (left) and cumulative (right) vessel-operating-year (VOY) for Russian nuclear submarines

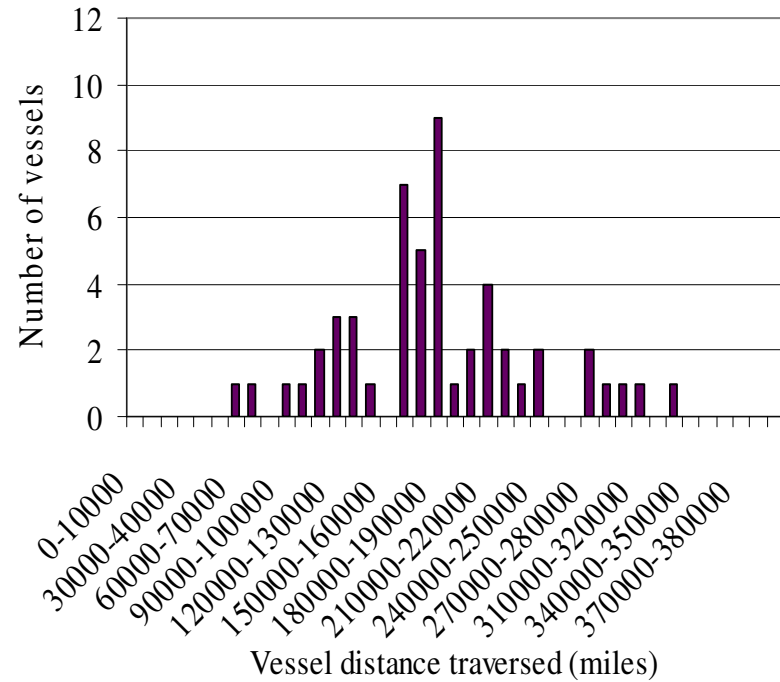
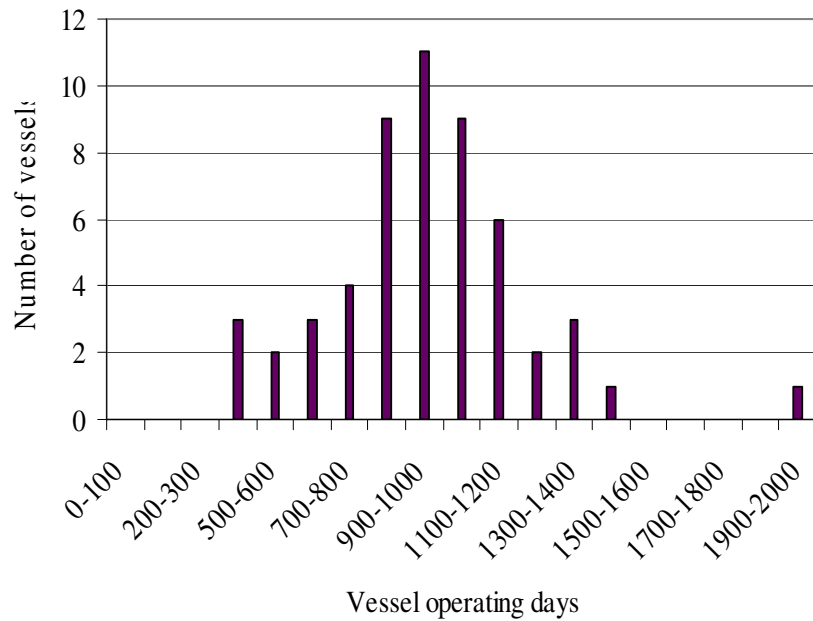


- 3. gen (VOY)
- 2. gen (VOY)
- 1. gen (VOY)
- LMC (VOY)

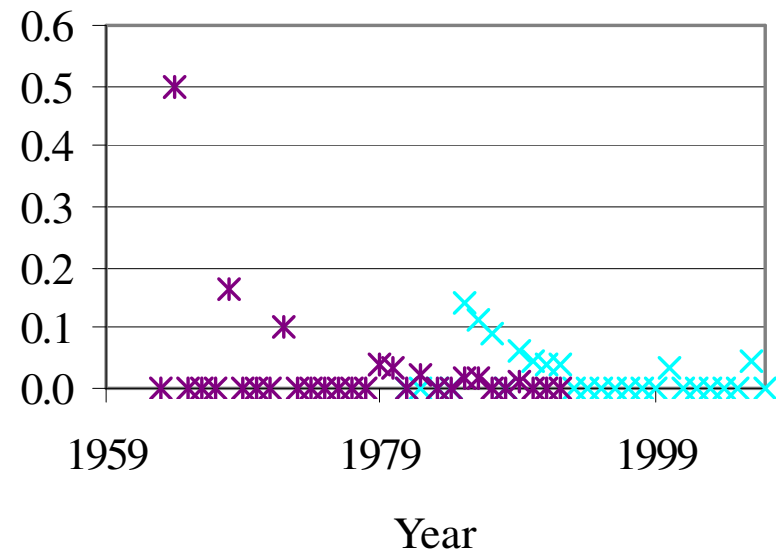
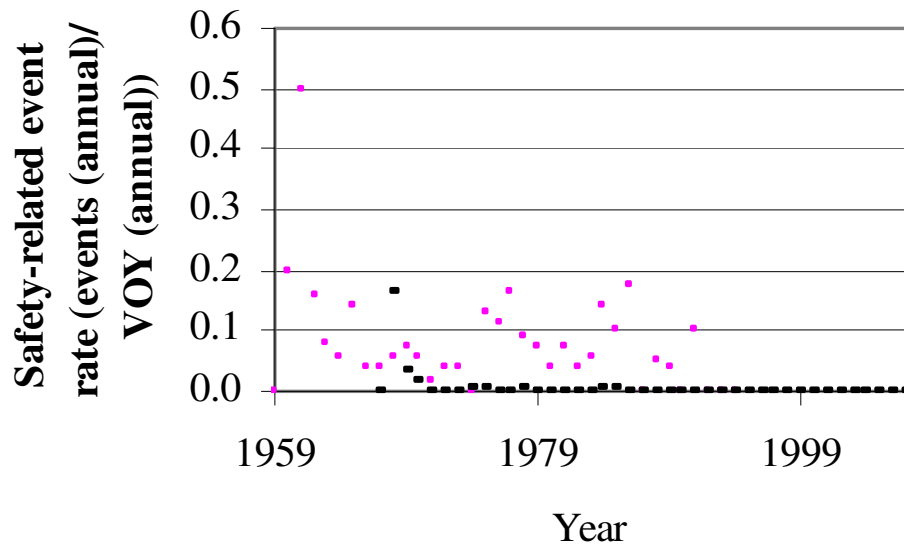


- All classes (total VOY)
- 2. gen (VOY)
- 1. gen (VOY)
- 3. gen (VOY)
- LMC (VOY)

Vessel operating days (left) and distance (right) for first-generation vessels

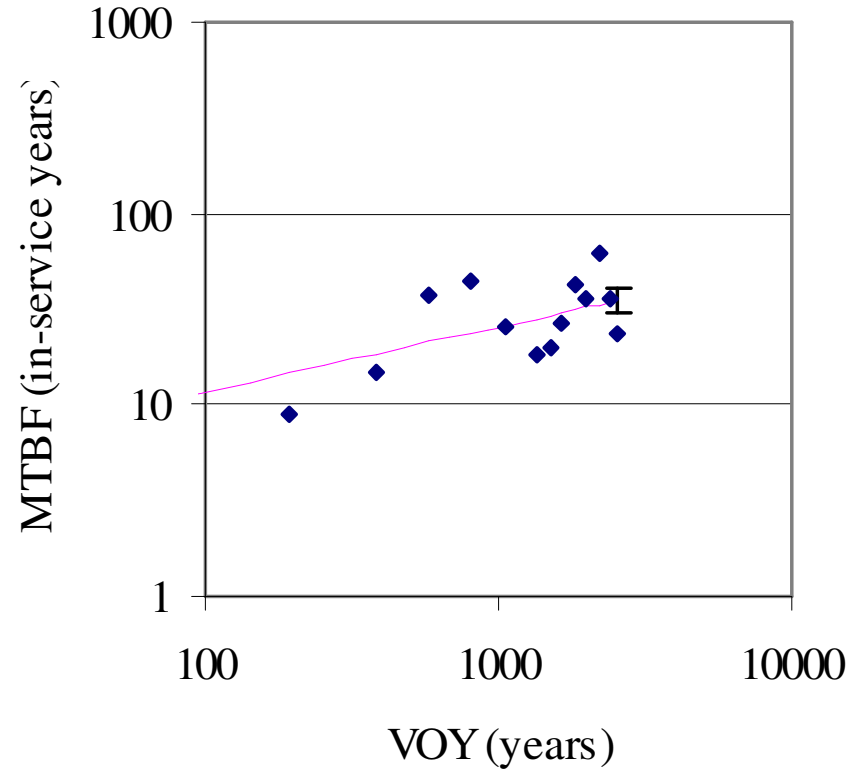
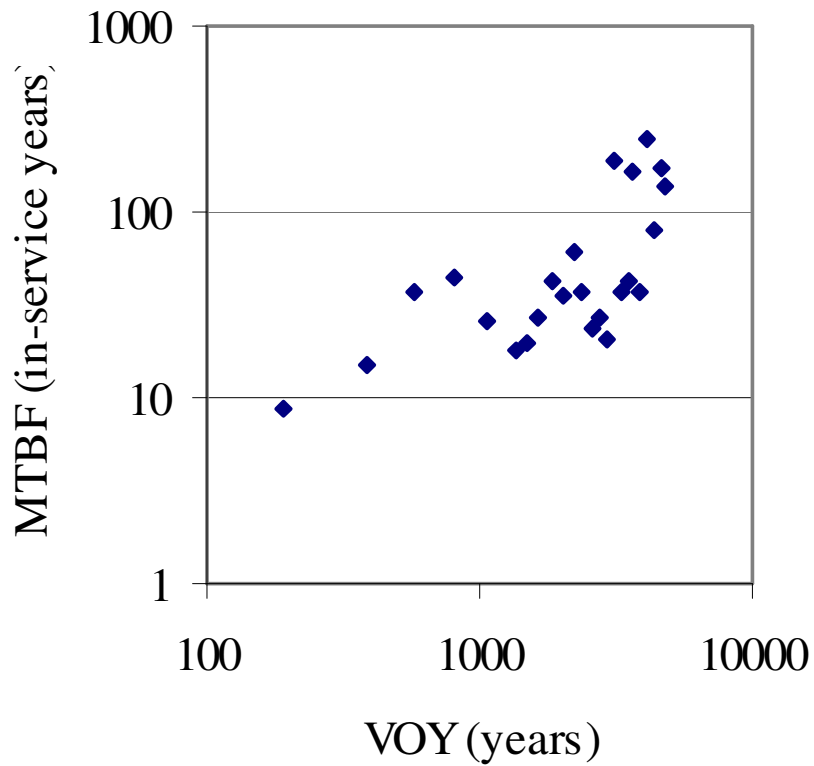


Safety-related event rate (annual) - annual number of events/ annual vessel operating years (all vessel classes)



- 1. generation vessels
- 2. generation vessel
- × 3. generation vessels
- × LMC vessels

Mean-time between safety-related events, 1959–2007 (left) and 1959–1984 (right) with confidence interval



Mean-time between safety-related events involving the release of radioactivity with confidence interval

