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Nuclear Reactor Monitoring With an Above Ground Antineutrino Detector TIMOTHY CLASSEN, Lawrence Livermore National Laboratory — Technology to detect $\bar{\nu_e}$'s emitted from nuclear reactors has existed for more than 50 years. This technology has been used in a range of experiments probing the neutrino parameter space. A continuing effort has been made at LLNL to test whether this technology may be used for a more practical purpose, the monitoring of nuclear reactors with a focus on safeguarding dangerous nuclear materials. As part of this role a new detector is being developed for deployment above ground at the Point Lepreau Nuclear Generating Station in New Brunswick Canada. The detector will observe a reactor core through a full start-up phase, to determine how well it can measure changes in nuclear fuel composition. This talk will focus on the challenges of the experiment, and how the techniques of fundamental neutrino research may be used to overcome them. This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

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