Abstract Submitted
for the APR11 Meeting of
The American Physical Society

Cooperative Monitoring of Reactors with Antineutrino Detectors[1] GREGORY KEEFER, Lawrence Livermore National Lab — LLNL and SNL have been exploiting the unique characteristics of reactor antineutrinos for nearly a decade in an effort to develop an independent means of monitoring fissile material diversion for reactor safeguard programs. The current capabilities of antineutrino detectors used in a non-proliferation regime are such that the operational status, power levels and fissile content of the nuclear reactor can be determined in real-time. These experiments were performed at stand-off distances of a few tens of meters. In the last few years, the International Atomic Energy Agency has begun to consider the potential of this technology for its reactor safeguards regime. In this talk, I describe the state of the art for this application, and emphasize the natural overlap with ongoing efforts in fundamental physics to measure the oscillations of antineutrinos using nuclear reactors as sources.

[1]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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Date submitted: 14 Jan 2011 Electronic form version 1.4