

April 23, 2007

MEMORANDUM TO: Mark A. Cunningham, Director
Division of Fuel, Engineering and Radiological Research
Office of Nuclear Regulatory Research

FROM: Patrick L. Hiland, Director ~~/RA/~~ O'Brien for
Division of Engineering
Office of Nuclear Reactor Regulation

SUBJECT: REVIEW OF DRAFT REPORT, "COEXISTENCE ASSESSMENT OF
INDUSTRIAL WIRELESS PROTOCOLS IN THE NUCLEAR FACILITY
ENVIRONMENT"

By memorandum dated February 20, 2007, draft NUREG/CR-xxxx, "Coexistence Assessment of Industrial Wireless Protocols in the Nuclear Facility Environment," was sent to the Office of Nuclear Reactor Regulation for review and comment. The Instrumentation and Controls Branch (EICB) has reviewed the subject report, and has determined that this document is accurate in its assessment of potential interference problems which may exist when two or more of the three protocols investigated are installed in one facility.

There are some limitations to this study in that only three protocols, Bluetooth, Zigbee, and Wireless Fidelity (WiFi) were investigated, however this study will provide an example if further types of protocols are proposed and investigated.

There is statement on page 11 which states: "Because 802.11g has not yet been extensively used in the marketplace and has not proven to be as widely acceptable and reliable as WiFi, 802.11g will not be a protocol pursued at this time." Since the standard for 802.11g was ratified in June 2003, equipment using the 802.11g protocol has been widely used for a number of years, and any future use of WiFi would generally use the protocol with the highest bandwidth and greatest range, we believe the "g" variation of 802.11 should have been investigated. If the standard was still in development, as is the case with 802.11n, this omission would have been understandable.

This report may be useful to licensees who wish to use two of the studied protocols in nuclear facilities. This report does not discuss the regulatory aspects of use of wireless communication in nuclear facilities, nor does it provide any review guidance or acceptance criteria. NRR recommends that future reports associated with the investigation of wireless communications as an emerging technology should include the regulatory aspects of use of wireless communication in nuclear facilities and provide both review guidance and acceptance criteria.

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