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[Assessing and Evaluating the Self-Indicating Instant Radiation Alert Dosimeter \(SIRAD\)](#)

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Assessing and Evaluating the Self-Indicating Instant Radiation Alert Dosimeter (SIRAD)

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The Self-indicating Instant Radiation Alert Dosimeter, SIRAD, is a user-friendly, disposable casualty radiation dosimeter for monitoring high doses (roughly 5-200 rads) of ionizing radiation. It is manufactured by JP Labs(a) and has been distributed to first-responders for purposes of dose tracking. When exposed to radiation e.g., from a "dirty bomb", nuclear detonation or a radiation source, the sensing strip of SIRAD instantly develops a permanent color change which is cumulative and proportional to dose. SIRAD allows the individual to immediately self-assess the dose to which they may be subjected. It can provide the wearer and medical personnel instantaneous and accurate information on radiation exposure of the victim to assess the health risks and guide treatment. The device is approximately the size and thickness of a credit card and can be worn around the neck like an ID badge or clipped to a shirt pocket. As part of a research project, Oregon State University's Department of Nuclear Engineering and Radiation Health Physics conducted a series of evaluations of the SIRAD. Its response to gamma exposures totaling between 2.5 to 125 rads was measured. Responses from two gamma sources, ¹³⁷Cs and ²²⁶Ra, and a mixed gamma-neutron source, PuBe, were investigated. Readout of the color-changing strip was performed using a commercially available flatbed scanner and Adobe Photoshop 7.0® software to provide quantitative results and to remove subjectivity in the process. Under normal conditions of use the SIRAD can be read by personnel by use of a comparison color strip incorporated into the device.

(a) JP Labs., 120 Wood Avenue, Middlesex, NJ 08846, E-mail: sirad@jplabs.com, Internet: www.jplabs.com

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