

April 6, 2006

Scott Kvasnicka, Corporate Radiation Safety Officer  
MISTRAS Holdings Group, d/b/a Conam Inspection and  
Engineering Services, Inc./Quality Services Laboratories, Inc.  
899 Carol Court  
Carol Stream, IL 60188

SUBJECT: PERIMETER SURVEYS AT TEMPORARY JOB SITES IN ACCORDANCE  
WITH 10 CFR 20.1501(a) AND THE "TWO-MAN RULE," 10 CFR 34.41(a)

Dear Mr. Kvasnicka:

This is in response to your letter dated February 6, 2006, which summarized your understanding of two issues discussed at the Predecisional Enforcement Conference (PEC) held on January 31, 2006, at the Region III office. In the letter, you also requested clarification on the NRC's position in regard to these issues. Specifically, you requested the NRC's position regarding implementation of: (1) 10 CFR 20.1501(a), as it relates to perimeter surveys at temporary jobsites, and (2) 10 CFR 34.41(a), the "two-man rule," as it relates to line-of-sight between the radiographer and the additionally qualified person used to satisfy the regulatory requirement.

During the PEC, you questioned whether the NRC interpreted 10 CFR 20.1501(a) to require that a licensee perform a survey of the perimeter of the restricted area at a temporary jobsite each time the radiography source was exposed. Mr. Madera stated that it was the NRC's position that a survey needed to be performed at the perimeter (boundary) of the restricted area each time the radiography source was exposed. This position is based on the assumption that at a temporary jobsite the radiographic setup would be different for each radiographic exposure which could change the dose rate at the restricted area boundary. Therefore, any time a licensee changed the setup, e.g., orientation of the beam, thickness of the pipe or object being radiographed, strength of the source, changes in secondary barriers (if any), etc., a new radiation survey or evaluation must be conducted at the boundary of the restricted area to comply with 10 CFR 20.1501(a) and 10 CFR 20.1301(a)(2).

However, if a licensee conducted a survey or an evaluation of the radiation levels at the restricted area boundary, to comply with 10 CFR 20.1501(a) and 10 CFR 20.1301(a)(2), for all possible radiographic setup scenarios at a temporary job site, then a repeat radiation survey of the restricted area boundary would not be required. The licensee would be required to maintain records showing the results of these surveys or evaluations for three years after the record was made in accordance with 10 CFR 20.2103.

With regard to 10 CFR 34.41(a), the "two-man rule," your interpretation was that if the radiographer is operating the exposure device, then the assistant is there simply as an additional qualified person to aid in the prevention of unauthorized entry, and give assistance in the event of an emergency. The assistant can help control access to the area, but does not

need to be within line-of-sight of the radiographer. You further stated that simply because the assistant did not know the exact location of the radiographer, or could not see the radiographer, is not a violation of 10 CFR 34.41, 10 CFR 34.46, or your operating and emergency procedures. You believe that the actions of your radiographer were in compliance with the regulations, and you do not agree with the contention that line-of-sight is required between the assistant and the radiographer unless the assistant is performing the job duties outlined in 10 CFR 34.46. In addition, you asked for our definition of radiographic "operations" as referenced in 10 CFR 34.41(a).

Regarding the NRC position on the requirements under 10 CFR 34.41(a), the Office of Nuclear Materials Safety and Safeguards published in NUREG/BR-0017, No. 98-1, Licensee Newsletter (March 1998 - April 1998), that included an article entitled, "The Radiography 'Two-Man' Rule," that explains what must be done by licensees to comply with this requirement. Specifically, the additional qualified individual shall observe the radiography operations and be capable of providing immediate assistance to prevent unauthorized entry. Radiography may not be performed if only one qualified individual is present. This requires that a second individual must observe the operation to prevent entry into the restricted area so as to prevent unnecessary exposure to radiation. Radiographic operations, as defined in 10 CFR 34.3, means all activities associated with the presence of radioactive sources in a radiographic exposure device during use of the device or transport. Using a radiographic exposure device is considered a radiography operation, as referenced in 10 CFR 34.41(a), and continuous direct visual surveillance of the operation to protect against unauthorized entry into a high radiation area is an essential part of the radiography operation.

The additional qualified individual is present in the area of the radiography operations for two purposes: (1) prevent entry to restricted areas associated with the radiography operations; and (2) be available to assist the radiographer operating the radiography device, if necessary. However, the additional qualified individual does not have to maintain continuous direct surveillance of the radiography device. Generally, during the course of operations, the additional qualified individual must focus on the radiography setup/shot or focus on securing the area restricted for radiography, once the source is exposed, to prevent unauthorized entry. If the additional qualified individual fails to maintain surveillance, this failure would be considered an apparent violation of 10 CFR 34.41 and would be considered for possible enforcement action. It is not acceptable for the second individual to be in the truck dark room or some other location at the site where he/she is not performing surveillance of the restricted area and is not cognizant of the radiography activities. Audio or video links with the second individual are not satisfactory and do not meet the intent of the regulation.

Also, NUREG-1556, Volume 2 "Program-Specific Guidance About Industrial Radiography Licenses" states, on pages 8-36 under the section entitled, "Field/Temporary Jobsites," that both individuals must maintain constant surveillance of the radiography operations and be capable of providing immediate assistance to prevent unauthorized entry to the restricted area. In addition, the NUREG states that if the second individual is a radiographer's assistant, then, in accordance with 10 CFR 34.46(c), the radiographer must be directly observing the radiographer's assistant perform radiographic operations, i.e., whenever the radiographer's assistant uses radiographic exposure devices, associated equipment, or sealed sources, or conducts required radiation surveys. If the radiography source is exposed, regardless if the

radiographer or radiographer's assistant is just conducting surveillance of the restricted area boundary, the NRC considers this activity to be use of the radiographic device.

The Statements of Consideration for 10 CFR 34.41, "Conducting Industrial Radiographic Operations," (page 34-SC-8) states that the Commission believes that the safety issues involved in industrial radiography mandate the adoption of the requirement, particularly when radiography is performed in high places or in trenches, where problems can most often occur, and where the radiographer is not able to control access. It should also be evident that in case of accident or injury, the second person needed at the site must be more than an observer.

The NRC will provide you our final determination regarding the specific circumstances which were the subject of the predecisional enforcement conference in a separate correspondence.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). The NRC's document system is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

If you have any additional questions regarding this matter please contact Mr. Madera at (630) 829-9834.

Sincerely,

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Steven A. Reynolds, Director  
Division of Nuclear Materials Safety

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