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October 23, 2009

Dear Mr. Torres:

Thank you for your thorough review of the 32 radiological procedures submitted by SABIA for inclusion to the Radioactive Materials License No. 11-27727-01. I appreciate your help in improving the procedures and the time and effort which has been exhibited in your comments.

In some instances the comments are not incorporated as outlined, but I have attempted to explain these instances in the notes that are attached to your deficiency letter of September 21, 2009.

I am also re-submitting the 32 revised radiological procedures for inclusion to the SABIA Radioactive Materials License No. 11-27727-01.

Please contact me with any questions.

Sincerely,

James F. Miller
Radiation Safety Officer

From: "Torres, RobertoJ" RobertoJ.Torres@nrc.gov
To: James Miller Jmiller@sabiainc.com
CC: "Howell, Art" <Art.Howell@nrc.gov>, "Cain, Chuck" <Chuck.Cain@nrc.gov>,
"Whitten, Jack" <Jack.Whitten@nrc.gov>, "Cook, Jackie" <Jackie.Cook@nrc.gov>,
"Gaines, Anthony" Anthony.Gaines@nrc.gov
Date: Mon, 21 Sep 2009 10:59:21 -0500
Subject: Request for additional information

Mr. Miller:

NRC has completed the safety review of the 32 procedures submitted by SABIA as part of the license amendment request docketed under mail control number 472110. Attached is deficiency letter and revised table of radionuclides of concern (which is referenced in the letter). Please indicate how long will it take SABIA to address these deficiencies and provide revised procedures for NRC review and approval. Thank you.

Roberto J. Torres
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DEFICIENCY LETTER BELOW

1. SABIA Procedure 1002000 Emergency Procedures, Nuclear Gauges, Revision B:

A. All sections in this procedure (1 through 5) do not provide the user with an indication of what levels of radiation on a survey meter or wipe test result would indicate contamination. There are only 2 references to "greater than background" in sections 2 (Damage to radiation gauge) and 3 (Leaking source or contamination event).

Any indication of removable activity greater than background is sufficient indication that the worker should take the precautions specified in the emergency procedures. Field service work at the location of a fixed gauge installation is not the place to attempt to quantify a precise activity or to provide an analysis to determine whether a radiation reading indicates the presence of a leaking or contaminated source or whether it indicates the presence of NORM or TE-NORM.

B. The section on "Personnel Field Decontamination Procedures" does not have provisions for maintaining decontamination supplies at locations of source storage/use. This section discusses skin contamination but provides no instructions for lavage of nose or mouth contamination (as happened in the event).

Skin contamination should be minimal in all instances, since SABIA will not be dismantling any gauges containing Sr-90 or any other beta emitters. The decontamination procedure was taken from instructions for emergency first-responders for nuclear incidents.

The only sources expected to be removed from gauges are Cf-252 sources, which have a short half-life, and must be periodically replenished or replaced.

Cs-137 sources used in industrial gauges contain solid fused vitreous sources. Am-241 sources are electroplated onto a foil, and Cf-252 sources are either in the form of a Pd cermet wire or a Pd fused pellet.

C. The "Personnel Field Decontamination Procedure" section tells individuals to take a shower – how will this be implemented in the field? This section does not discuss monitoring of personnel decontamination efforts (what instruments to use, how to survey for personnel decontamination) or documentation of personnel decontamination efforts. This is important for dose assessment and to determine if medical intervention is necessary.

All coal mines and most other industrial facilities have shower facilities for employees working in dirty or dusty environments. This is not a problem. The questions of "monitoring of personnel decontamination efforts" is not appropriate for this discussion, since in an emergency situation, the most sensitive instrument will be used to monitor initial decontamination. The procedure clearly states, **"This procedure describes emergency field decontamination procedures to be used until trained responders arrive."**

2. SABIA Procedure 1002002 ALARA Practices Policy, Revision B:

A. Mentions “the device registration should be reviewed…standard manufacturer’s servicing procedures should be reviewed and followed…written procedures should be written...” The procedure provides no guidance to the user of where or how to obtain a sealed source and device registration certificate and manufacturer’s servicing procedures.

SABIA has on file, copies of all device registrations for SABIA devices and for all device registrations for devices which are referenced in the SABIA radiological procedures. Since 2002, the procedure for obtaining device registrations has changed numerous times, as has the security requirements relative to those device registrations. It is not appropriate to include any information which might, in the future, be considered as security related information. All SABIA authorized users have been informed that the SABIA RSO can obtain copies of any required device registration. This is considered as part of the planning for any work to be performed on gauges or devices.

B. In the section “Planning for Unusual Situations,” there is a discussion of leak testing and contamination surveys but no guidance to NOT handle the source until the results of the leak test analysis are obtained. The procedure does not put any boundary regarding what the user might conclude is contaminated based on the leak test result and contamination surveys. Appendix Q of NUREG-1556, Volume 7 provides guidance on contamination surveys and frequencies.

The section on “Planning for Unusual Situations” states in part, “Contamination surveys begin with the outermost container or enclosure. Contamination Survey should be checked before any work progresses.” The limits for contamination for these measurements are included in the individual procedures. The limits on contamination, imposed by SABIA, for the purposes of the work included in the SABIA radiological procedures is that contamination is any measurable radiation greater than background, when measured on a thin-window G-M counter. This is a different criteria from the limits specified in Appendix Q of NUREG-1556, Volume 7 or the limits specified in Table 8.6 of NUREG-1556, Volume 18, and is considered by SABIA to be more conservative. It is not practical, in the environmental conditions encountered in an industrial environment, for the authorized user to be concerned with different allowable limits and different detection efficiencies for each specific isotope, especially in an environment potentially contaminated by NORM or TE-NORM.

3. SABIA Procedure 1002003 Inspection and Receiving Procedure for Radioactive Materials, Revision B:

A. The procedure states that if any contamination above background is found to stop work immediately. The procedure needs to define what background is for the Idaho Falls location or establish threshold levels for contamination such as those described in external survey contamination procedure SABIA 1002011 (1000 dpm per 100 cm2 for gamma radiation and 200 dpm per 100 cm2 for beta. 20 dpm/100cm2 for transuranics such as Americium 241, Californium-252 and Curium-244). Describe actions that will be taken if thresholds are exceeded.

Typically background radiation levels are established with a specific monitor or meter. If a 1 inch thin window G-M counter is used, the background radiation level will be different than that determined using a 3 inch thin window G-M counter. The background radiation levels have been measured for each counting meter used at the Idaho facility. The authorized users know the approximate background readings for each instrument, and a statement describing the specific sensitivity or stating the definition of the background level does not belong in the procedure, since it will change depending on the specific meter utilized for the measurement.

B. The procedure needs to tell the user that absent of a most current leak test result, the user needs to perform a leak test and evaluate the result before accepting a device (if greater than 0.005 microcuries – stop work, call RSO, describe additional actions).

The Procedure 1002003, Revision B, has step 10. under the heading, Procedure, to perform a contamination test of each source to verify the absence of any removable contamination. This is sufficient to verify the integrity of the source. If paperwork on previous leak testing is missing from the shipping documentation, this discrepancy can then be safely researched and any problems corrected, either by notation of the discrepancy and obtaining the corrected documentation from the shipper, or by performing a proper leak test on the source. In either instance, this must be properly documented as a shipping discrepancy, and, in the case of a shipment containing sources which were not properly leak tested prior to shipment, becomes a reportable incident. In either case, a contamination test has already been performed on the sources at this point in the procedure, to verify the source integrity and lack of contamination. A note will be added to the procedure, following step 5, to contact the RSO to obtain resolution of any shipping discrepancies or missing shipping documentation before opening the source container.

C. Table of Radionuclides of Concern is not current. Attached is more current list.

A corrected table of Radionuclides of Concern showing the current list will be attached to the procedure.

4. SABIA Procedure 1002009 Nuclear Source Leak Test Calculation Sheet, Revision A:

The standard counting efficiency is listed as 1 - this is an error.

The SABIA calculation sheet is an interactive PDF document. The default value of counting efficiency is provided on this calculation sheet as 1, so that the mathematical functions on the sheet do not automatically produce an error and prevent the form from operating correctly. The default value of counting efficiency is designed to be replaced with the specific value of counting efficiency provided as marked on each meter, following calibration. The default value of 1 was chosen since this value is obviously an in incorrect value. A default value which is closer to the correct value (i.e. 0.2) might be easily overlooked, and not replaced with the correct value.

5. SABIA Procedure 1002010 Nuclear Source Leak Test Report, Revision A:

The footnote makes reference to 0.005 microcuries. The equivalent in SI units (185 Becquerels) needs to be added next to 0.005 microcuries since SABIA procedure 1002051, Revision A, Radioactive Source Leak Test Procedure, instructs the user to determine if a source is leaking by using a calculation that leads to Becquerels.

This correction will be added to the footnote on this procedure.

6. SABIA Procedure 1002011 Radiation Survey Procedure for Work Areas, Revision B:

   A. The procedure states to perform radiation surveys at 30 cm and at 1 meter from the gauge or analyzer but does not tell the user what thresholds the user needs to compare the results and the required actions that need to be taken if radiation survey results are above those thresholds. Please address in the procedure.

   The performance of a radiation survey on a gauge is in reference to any gauge which happens to be included in the work area at the SABIA facility. The proper radiation survey forms for each gauge are on file at SABIA, indicating the specific locations for the radiation measurements to be taken. In all cases, the allowable radiation levels are specified on the device registration for the specific gauge. This does not need to be repeated on this procedure.

   B. There is a section titled “Radiation Contamination Survey Procedure”. This section provides the removable contamination limit at 1000 dpm per 100 cm2 for gamma radiation and 200 dpm per 100 cm2 for beta. Other sources SABIA are authorized in the license are transuranics like Americium-241, Californium-252 and Curium-244. These have lower values for acceptable removable contamination (20 dpm/100 cm2). Please address in the procedure.

   The procedure will be revised to add the contamination limits for these transuranic isotopes.

7. SABIA Procedure 1002012 Installation, Removal or Service of Fixed Radiation Gauges (Non-Routine Operations), Revision B:

A. Instructs the user to obtain the SSDR from different sources (note that NRC can also provide SABIA with copies of SSDRs).

SABIA procedures require the SABIA RSO to obtain all required SSDR sheets from the NRC or from the RSO for the site where the gauge is located. Members of the SABIA radiation safety committee review all SSDR sheets to verify the work to be performed. The statement in this case simply reiterates the established SABIA internal procedures.

B. For the Installation Procedure, Removal Procedure and Service Procedure, the procedures tells the user to check for "removable contamination" on the outside surface of the device [following procedure 1002011], but does not exactly specify performing an actual leak test prior to servicing the gauge and reviewing the result which is a license requirement. A check for removable contamination does not meet the criteria of a leak test (sample taken in an area closest/most accessible to the source or source holder). Following these procedures, someone might service a gauge without first verifying whether or not the sealed source is leaking. Add to the procedures the requirement to perform a leak test and to evaluate the results before proceeding servicing the gauge (if greater than 0.005 microcuries – stop work, call RSO, describe additional actions).

A statement will be added to verify that a leak test has been performed on the source within the gauge within the required time as specified on the SSDR sheet. Otherwise a leak test is to be performed on the source utilizing SABIA procedure 1002017.

C. Table of Radionuclides of Concern is not current. Attached is more current list.

A corrected table of Radionuclides of Concern showing the current list will be attached to the procedure.

D. Installation Procedure: Steps 5, 6 and 11 tells the user to verify radiation levels at the surface of the gauge source housing, at a distance of 1 meter, in front of the shutter mechanism, and to compare the results with the levels described in the device registration sheet. These steps do not direct the user to what actions the user needs to take (example: stop work, contact RSO, describe additional actions) if the radiation levels exceed the levels specified in the device registration sheet. Please address.

Additional steps will be added to the procedure.

E. Removal Procedure: Steps 4, 6 and 9 tells the user to verify radiation levels at the surface of the gauge source housing, at a distance of 1 meter, in front of the shutter mechanism, and to compare the results with the levels described in the device registration sheet. These steps do not direct the user to what actions the user needs to take (example: stop work, contact RSO, describe additional actions) if the radiation levels exceed the levels specified in the device registration sheet. Please address.

Additional steps will be added to the procedure.

F. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);
ii. If levels are according to certificate, proceed to approach the gauge;
iii. Proceed to take measurements at 1 meter and 30 cm;
iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);
v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

The SABIA radiological procedure is not designed to be a replacement for radiation safety training, whether written training, oral training, or hands-on training. The radiological procedure is not the vehicle to attempt to teach, but a vehicle to describe the steps necessary to correctly perform a task. No additional steps are required to accomplish this goal.

8. SABIA Procedure 1002014 Source Installation and Removal from a Radiation Gauge, Revision B:

A. There is actually only a procedure given for installation, but not for removal. Although the procedure title says “removal” there is no procedure for removal of a source. This is an important deficiency that should be corrected to minimize the likelihood of a similar incident in the future.

Additional steps will be added to properly address source removal.

B. Table of Radionuclides of Concern is not current. Attached is more current list.

A corrected table of Radionuclides of Concern showing the current list will be attached to the procedure.

C. Source Installation: Step 2 tells the user to verify leak test information, radiation survey information and contamination survey information per SABIA procedure 1002003. Step 14 tells the user to perform a radiation survey and contamination survey to check the storage container for removable contamination.

i. Leak test - The procedure 1002014 needs to tell the user that absent of a most current leak test result, the user needs to perform a leak test and evaluate the result before accepting a device (if greater than 0.005 microcuries – stop work, call RSO, describe additional actions). Please address.

This is already addressed in the SABIA procedure for receipt of radioactive materials.

ii. Radiation survey - The procedure 1002014 needs to tell the user to verify radiation levels at the surface of the gauge source housing, at a distance of 1 meter, in front of the shutter mechanism, and to compare the results with the levels described in the device registration sheet; and to direct the user to what actions the user needs to take (example: stop work, contact RSO, describe additional actions) if the radiation levels exceed the levels specified in the device registration sheet. Please address.

Additional statements will be added to instruct the user to contact the RSO if there are any discrepancies with the radiation survey.

iii. Contamination survey - The procedure 1002014 needs to define what levels will determine that a device is contaminated. SABIA procedure 1002011 establishes threshold levels for contamination (1000 dpm per 100 cm2 for gamma radiation and 200 dpm per 100 cm2 for beta. 20 dpm/100cm2 for transuranics such as Americium-241, Californium-252 and Curium-244). Describe actions that will be taken if thresholds are exceeded. Please address in procedure.

Since, at this point in the procedure, the sources will have been leak tested and contamination tested, it is not anticipated that any significant contamination could be found removable from the shipping container. However, a contamination survey of the shipping cask can only determine gross counts, it cannot identify specific isotopes, and cannot discriminate between gamma emitters, beta emitters, or transuranics. The field limit for determination of contamination from a shipping container is any measurable radiation above background.

The SABIA emergency procedures specify the steps to be taken.

D. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

The procedure, as written, provides all necessary steps required to adequately address the specific gauges included in SABIA radiological procedures 1002015, 1002016, 1002021 through 1002035, 1002034, and 1002035. No other gauges are expected to be serviced, other than periodic leak testing and/or shutter testing. The logic flow addressed above covers more than the required steps in the procedure.

SABIA Procedure 1002015 SABIA XC-5000 Leak Test and Non-Routine Maintenance, Revision B:

A. Applicability – This part states that procedure 1002015 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 sources used in XC-5000 series gauges is 6 months according to registration certificate NR-1195-D-103-S dated October 20, 2008. This certificate also lists Cf-252 as the only radionuclide to be used in XC-5000 series. Please clarify the reference that procedure 1002015 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate only authorizes Cf-252.

The procedure will be changed to state 6 months for Cf-252 sources in the United States.

B. The procedure mentions an Alpha Survey meter but it is not clear whether the meter SABIA owns has been tested for its alpha detection efficiency. Please address.

The Procedure Revision B, mentions a Beta/Gamma Survey Meter. The procedure, Revision A, mentioned an Alpha Survey meter, which is not required for monitoring of Cf-252 sources. Even though Cf-252 is primarily an alpha emitter, the material has a decay mode which is accompanied by spontaneous fission, which is the source of the neutron emission. The fission products, if present, can easily be detected using a Beta/Gamma survey meter for contamination measurements on these sources.

C. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

The statement is correct as stated. For purposes of the servicing outlined in this procedure, the source movement must not be locked, due to the various steps which require the movement of the sources for such servicing as source replacement, leak testing, etc.

D. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

E. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

F. Source leak test and device on/off test (shutter test) – Step 18 states: "If any contamination is found, IMMEDIATELY notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 18 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or

engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Source leak test and device on/off test (shutter test) - There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Source shutter adjustments – The first step should read: Before proceeding with shutter adjustment, verify that the sealed source(s) is/are not leaking by performing a leak test and reviewing the result.

The procedure is written to proceed in a linear manner, progressing from leak testing to shutter check and dimensional adjustments. The only reasons for performing the shutter adjustment as a separate operation is if a mechanical adjustment is required at some time within 6 months of having performed a leak test. If so, then additional leak testing is not required.

I. Source replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

Leak test documentation should be included in the shipment of all radioactive sources. The step is designed as a reminder for the user to verify that this documentation has been properly included in the shipment by the shipper. Additional steps are not required.

J. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not l leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

10. SABIA Procedure 1002016 SABIA XL-5000 Leak Test Procedure and Non-Routine Maintenance. Revision B:

A. Applicability – This part states that procedure 1002016 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 sources used in XL series gauges is 6 months according to registration certificate NR1195-D-104-S dated March 17, 2009. This certificate also lists Cf-252 as the only radionuclide to be used in XL series. Please clarify the reference that procedure 1002016 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate only authorizes Cf-252.

The procedure will be changed to state 6 months for Cf-252 sources in the United States.

B. The procedure mentions an Alpha Survey meter but it is not clear whether the meter SABIA owns has been tested for its alpha detection efficiency. Please address.

The Procedure Revision B, mentions a Beta/Gamma Survey Meter. The procedure, Revision A, mentioned an Alpha Survey meter, which is not required for monitoring of Cf-252 sources. Even though Cf-252 is primarily an alpha emitter, the material has a decay mode which is accompanied by spontaneous fission, which is the source of the neutron emission. The fission products, if present, can easily be detected using a Beta/Gamma survey meter for contamination measurements on these sources.

C. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

The statement is correct as stated. For purposes of the servicing outlined in this procedure, the source lever must not be locked, due to the various steps which require the rotation of the source position lever for source replacement, leak testing, etc.

D. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

E. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

F. Source leak test and shutter test – Step 18 states: "If any contamination is found, IMMEDIATELY notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 18 needs to direct the user to immediately stop work,

immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Source leak test and shutter test - There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Source replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

Leak test documentation should be included in the shipment of all radioactive sources. The step is designed as a reminder for the user to verify that this documentation has been properly included in the shipment by the shipper. Additional steps are not required.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);
v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

11. SABIA Procedure 1002019, Revision A, Packing List and Product Certification: This procedure involves packing list/shipping data information and provides alpha, beta/gamma contamination levels. Please provide regulatory reference for these adopted levels since I could not find these after a cursory review of transportation regulations.

The levels stated in SABIA procedure 1002019 are in error. The correct levels should be 1000 dpm per 100 cm^2 for gamma radiation, 200 dpm per 100 cm^2 for beta, and 20 dpm per 100cm^2 for transuranics such as Americium-241, Californium-252 and Curium-244. These will be corrected.

The stated limit for alpha of 9 x 10^{-6} uCi per 100 cm^2 is identical to 19.98 dpm per 100cm^2.

12. SABIA Procedure 1002051, Revision A, Radioactive Source Leak Test Procedure:

A. Section Leak Test Certificate – Step 9 should direct the user that if count is equal or greater than 185 Becquerels to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

Instructions will be added to refer to SABIA emergency procedure if a source is found to be leaking

B. Table of Radionuclides of Concern is not current. Attached is more current list.

An updated table will be included

13. SABIA procedure 1002052, Revision A, ETI DGA-400 Source Shutter, Leak Test Procedure:

A. Scope – It states that scope is to perform "shutter test" and "leak test". The procedures for all of the other gauges requested authorization for "shutter test", "leak test" and "source replacement". Since there is no reference to "source replacement" in procedure 1002052, authorization will be granted only for "shutter test" and "leak test" on ETI Model DGA 400 Series.

This authorization is precisely what is requested for this device.

B. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

C. Applicability – This part states that procedure 1002052 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252, Barium-133 and Cesium-137 sources used in ETI DGA-400 gauges is 6 months according to registration certificate TN-0799-D-101-B dated March 12, 1998. Please clarify the reference that procedure 1002015 (leak test and shutter maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate only states 6 month leak test frequency for the approved radionuclides (Ba-133, Cf-252 and Cs-137).

This will be changed to correspond to the six months allowed by the device registration. (Note: this device is authorized for Ba-133, Am-241, and Cs-137, not Cf-252)

D. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

The statement is correct as stated. For purposes of the servicing outlined in this procedure, the source lever must not be locked, due to the various steps which require the movement of the source position lever for source shutter testing.

E. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

F. Section titled Shutter Test – Step 3.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 3.d. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure

XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Section tiled Wipe Test (Shutter Test) – There should be a step (4.e.) directing the user to: If leak test results are negative, proceed with shutter test.

This note will be added.

H. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with s source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

14. SABIA procedure 1002053, Revision A, ASYS and Gamma FSA and EBA Leak Test and Non-Routine Maintenance:

A. NRC could not find a registration certificate for ASYS. Provide copy of sealed source and device registration certificate (or certificate number) for device ASYS.

ASYS or Analyser Systems was acquired by thermo Gamma-Metrics. The SSD sheet for this device is CA1046D101B. There are devices in operation at customer sites, which are identified with the company name ASYS and with the company name Analyser Systems.

B. Applicability – This part states that procedure 1002053 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 sources used in Models FSA and EBA gauges is 6 months according to registration certificate CA-1046-D-101-B dated October 10, 2007. This certificate also lists Cf-252 as the only radionuclide to be used in Models FSA and EBA. Please clarify the reference that procedure 1002053 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate only authorizes Cf-252.

This will be changed to correspond to the six months allowed by the device registration.

C. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

D. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

Since this device does not have a shutter mechanism or any source movement from the normal position, this statement will be removed from the procedure.

E. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

F. Section titled Source Leak Test – Step 4.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 4.d. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will

be added to the SABIA emergency procedures 1002000.

G. Section titled Source Leak Test – Step 15 states: "If any contamination is found, notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

H. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

   i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

   ii. If levels are according to certificate, proceed to approach the gauge;

   iii. Proceed to take measurements at 1 meter and 30 cm;

   iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

   v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

15. SABIA procedure 1002054, Revision A, Gamma Model 2000 Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002054 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 and Cesium137 sources used in Model 2000 gauges is 6 months according to registration certificate CA-0305-D-101-S dated October 22, 2007. Please clarify the reference that procedure 1002054 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate only states 6 month leak test frequency for the approved radionuclides (Cf-252 and Cs-137).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – Include the following text if applicable since it has been used in other procedures: "The source lever must be locked in the OFF position for servicing or maintenance. Under no circumstances is the source lever to be locked in the ON position."

The statement is correct as stated. For purposes of the servicing outlined in this procedure, the source lever must not be locked, due to the various steps which require the movement of the source position lever for source shutter testing.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Wipe Test (Shutter Test) – Step 5.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 5.d. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Wipe Test (Shutter Test) – Step 15 states: "If any contamination is found, notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Section titled Wipe Test (Shutter Test) - There should be a step directing the user to: If leak test results are negative, proceed with shutter test.

This note will be added.

H. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

16. SABIA procedure 1002055, Revision A, Gamma CB-Series Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002055 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 used in Model CB-Series gauges is 6 months according to registration certificate CA0305-D-104-S dated October 22, 2007. Please clarify the reference that procedure 1002055 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate states 6 month leak test frequency for the only approved radionuclide (Cf-252).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – Include the following text if applicable since it has been used in other procedures: "The source lever must be locked in the OFF position for servicing or maintenance. Under no circumstances is the source lever to be locked in the ON position."

The statement is correct as stated. For purposes of the servicing outlined in this procedure, the source lever must not be locked, due to the various steps which require the movement of the source position lever for source shutter testing.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Wipe Test (Shutter Test and Source Leak Test) – Step 4.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 4.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Wipe Test (Shutter Test and Source Leak Test) – Step 15 states: "If any contamination is found, notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to

procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Section titled Shutter Test and Source Leak Test - There should be a step directing the user to: If leak test results are negative, proceed with shutter test.

This note will be added.

H. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

17. SABIA procedure 1002056, Revision A, Gamma SL-1200 Leak Test and Non-Routine Maintenance:

A. Procedure number listed in the title page states “10056” and is incorrect. Correct procedure title is “1002056”.

This number will be corrected.

B. Applicability – This part states that procedure 1002056 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 used in Model SL-Series gauges is 6 months according to registration certificate CA0305-D-105-S dated October 22, 2007. Please clarify the reference that procedure 1002056 (leak test and non-routine maintenance) will be performed “from 6 months to three years for other sources” since the registration certificate states 6 month leak test frequency for the only approved radionuclide (Cf-252).

This will be changed to correspond to the six months allowed by the device registration.

C. Section titled Procedure – Include the following text if applicable since it has been used in other procedures: “The source lever must be locked in the OFF position for servicing or maintenance. Under no circumstances is the source lever to be locked in the ON position.”

Since this device does not have a shutter mechanism or any source movement from the normal position, this statement will be removed from the procedure.

D. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

E. Section titled “Wipe Procedure” – The following sentence is used in the procedure and it is incorrect: “A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis.” The reference to “generally” must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

F. Section titled Device Wipe Test – Step 5.d. states: “If contaminated, contact site RSO and SABIA RSO immediately”. Description of next steps is missing. Step 5.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Section titled Device Wipe Test – Step 15 states: “If any contamination is found, notify site

RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

H. Section titled Device Wipe Test - There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

I. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

J. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

18. SABIA procedure 1002057, Revision A, Gamma SL-Series Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002057 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 used in Model SL-Series gauges is 6 months according to registration certificate CA0305-D-105-S dated October 22, 2007. Please clarify the reference that procedure 1002057 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate states 6 month leak test frequency for the only approved radionuclide (Cf-252).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – Include the following text if applicable since it has been used in other procedures: "The source lever must be locked in the OFF position for servicing or maintenance. Under no circumstances is the source lever to be locked in the ON position."

Since this device does not have a shutter mechanism or any source movement from the normal position, this statement will be removed from the procedure.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Device Wipe Test – Step 5.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 5.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Device Wipe Test – Step 15 states: "If any contamination is found, notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Section titled Device Wipe Test - There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iii. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

iv. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

19. SABIA procedure 1002058, Revision A, Gamma CB-AT, CB-OMNI, CB-CS, CBX Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002058 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 used in Model CB-AT and CB-CS gauges is 6 months according to registration certificate CA-0305-D-104-S dated October 22, 2007. The leak test frequency for Cf-252 used in Model CB-OMNI gauges is 6 months according to registration certificate CA-1046-D-102-S dated September 25, 2007. The leak test frequency for Cf-252 used in Model CBX gauges is 6 months according to registration certificate CA0305-D-113-S dated October 22, 2007. Please clarify the reference that procedure 1002058 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificates state 6 month leak test frequency for the only approved radionuclide (Cf-252).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

Since this device does not have a shutter mechanism or any source movement from the normal position, this statement will be removed from the procedure.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Source Leak Test – Step 5.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 5.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Device Wipe Test – Step 14 states: "If any contamination is found, notify site

RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Section titled Source Leak Test - There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

20. SABIA procedure 1002059, Revision A, Gamma CB-HI, CB-MP, CB-THS Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002059 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 and Cs-137 used in Model CB-HI gauges is 6 months according to registration certificate CA0305-D-106-S dated October 22, 2007. The leak test frequency for Cf-252 used in Model CB-MP gauges is 6 months according to registration certificate CA0305-D-109-S dated October 22, 2007. The leak test frequency for Cf-252 used in Model CB-THS gauges is 6 months according to registration certificate CA0305-D-104-S dated October 22, 2007. Please clarify the reference that procedure 1002059 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificates state 6 month leak test frequency for the approved radionuclides (Cf-252 and Cs137).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

Since this device does not have a shutter mechanism or any source movement from the normal position, this statement will be removed from the procedure.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Source Leak Test – Step 5.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 5.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Device Wipe Test – Step 14 states: "If any contamination is found, notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO,

follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Section titled Source Leak Test - There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

21. SABIA procedure 1002060, Revision A, Gamma Fastlab Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002060 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 used in Model Fastlab gauges is 6 months according to registration certificate CA-0305D-102-S dated October 22, 2007. Please clarify the reference that procedure 1002060 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate states 6 month leak test frequency for the only approved radionuclide (Cf-252).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

Since this device does not have a shutter mechanism or any source movement from the normal position, this statement will be removed from the procedure.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Source Leak Test – Step 5.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 5.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Device Wipe Test – Step 15 states: "If any contamination is found, notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will

be added to the SABIA emergency procedures 1002000.

G. Section titled Source Leak Test - There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

22. SABIA procedure 1002061, Revision A, Gamma FQA Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002061 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 used in Model FQA gauges is 6 months according to registration certificate CA-0305-D102-S dated October 22, 2007. Please clarify the reference that procedure 1002061 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate states 6 month leak test frequency for the only approved radionuclide (Cf-252).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

Since this device does not have a shutter mechanism or any source movement from the normal position, this statement will be removed from the procedure.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Source Leak Test – Step 4.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 4.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Device Wipe Test – Step 14 states: "If any contamination is found, notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will

be added to the SABIA emergency procedures 1002000.

G. Section titled Source Leak Test - There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

23. SABIA procedure 1002062, Revision A, SABIA K-1000 Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002062 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 used in Model K-1000 gauges is 6 months according to registration certificate CA-1195D-101-S dated March 3, 2005. Please clarify the reference that procedure 1002062 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate states 6 month leak test frequency for the only approved radionuclide (Cf-252).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – Include the following text if applicable since it has been used in other procedures: "The source lever must be locked in the OFF position for servicing or maintenance. Under no circumstances is the source lever to be locked in the ON position."

Since this device does not have a shutter mechanism or any source movement from the normal position, this statement will be removed from the procedure.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Source Leak Test – Step 4.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 4.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Device Wipe Test – Step 14 states: "If any contamination is found, notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Section titled Source Leak Test - There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

24. SABIA procedure 1002063, Revision A, SABIA L-2000 Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002063 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 used in Model L-2000 gauges is 6 months according to registration certificate NR-1195D-105-S dated October 20, 2008. Please clarify the reference that procedure 1002063 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate states 6 month leak test frequency for the only approved radionuclide (Cf-252).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

Since this device does not have a shutter mechanism or any source movement from the normal position, this statement will be removed from the procedure.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Source Leak Test – Step 4.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 4.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Device Wipe Test – Step 14 states: "If any contamination is found, notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will

be added to the SABIA emergency procedures 1002000.

G. Section titled Source Leak Test - There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

25. SABIA procedure 1002064, Revision A, SABIA X-1 Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002064 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cf-252 used in Model X-1 gauges is 6 months according to registration certificate NR-1195-D104-S dated March 17, 2009. Please clarify the reference that procedure 1002064 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate states 6 month leak test frequency for the only approved radionuclide (Cf-252).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

Since this device does not have a shutter mechanism or any source movement from the normal position, this statement will be removed from the procedure.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Source Leak Test – Step 4.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 4.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Device Wipe Test – Step 14 states: "If any contamination is found, notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Section titled Source Leak Test - There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

26. SABIA procedure 1002065, Revision A, Scan-Tech 2500, 2600, 2800, 3500 and TBM-201 Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002065 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Cesium 137 and Americium 241 used in Models 2500, 2600, 3500 and TBM-201 gauges is 6 months according to registration certificates GA-0716-D-105-G dated August 1, 1991, GA-0716-D-106-G dated July 16, 1998, and GA-0716-D-101-S dated March 20, 1986. Please clarify the reference that procedure 1002065 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificates state 6 month leak test frequency for the approved radionuclides (Cesium 137 and Americium 241).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

The statement is correct as stated. For purposes of the servicing outlined in this procedure, the source lever must not be locked, due to the various steps which require the movement of the source position lever for source shutter testing.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Device on/off Test and Wipe Test (Shutter Test) – Step 4.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 4.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Device on/off Test and Wipe Test (Shutter Test): There are steps missing in this leak test procedure (taking the sample, handling the sample, etc.). Other SABIA procedures describe these additional steps. A complete procedure is needed to grant wipe test and shutter test authorization for Models Scan-Tech 2500, 2600, 2800, 3500 and TBM-

201.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Section titled Device on/off Test and Wipe Test (Shutter Test): There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Source Replacement Section is missing. A procedure is needed to grant source replacement authorization for Models Scan-Tech 2500, 2600, 2800, 3500 and TBM-201. There should be a step with language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

27. SABIA procedure 1002066, Revision A, Scan-Tech 9000 Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002066 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Californium 252, Cesium 137 and Americium 241 used in Model 9000 gauges is 6 months according to registration certificate GA-0716-D-104-S dated March 17, 2006. Please clarify the reference that procedure 1002066 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate states 6 month leak test frequency for the approved radionuclides (Californium 252, Cesium 137 and Americium 241).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

The statement is correct as stated. For purposes of the servicing outlined in this procedure, the source lever must not be locked, due to the various steps which require the movement of the source position lever for source shutter testing.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Device on/off Test and Wipe Test (Shutter Test) – Step 4.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 4.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Device on/off Test and Wipe Test (Shutter Test): There are steps missing in this leak test procedure (taking the sample, handling the sample, etc.). Other SABIA procedures describe these additional steps. A complete procedure is needed to grant wipe test and shutter test authorization for Model Scan-Tech 9000.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Section titled Device on/off Test and Wipe Test (Shutter Test): There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Source Replacement Section is missing. A procedure is needed to grant source replacement authorization for Model Scan-Tech 9000. There should be a step with language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO);

ii. If levels are according to certificate, proceed to approach the gauge;

iii. Proceed to take measurements at 1 meter and 30 cm;

iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.

28. SABIA procedure 1002067, Revision A, Scan-Tech 9200 and 9500 Leak Test and Non-Routine Maintenance:

A. Applicability – This part states that procedure 1002067 will be performed on a periodic basis (6 months for Californium-252 neutron sources and from 6 months to three years for other sources). The leak test frequency for Californium 252 and Cesium 137 used in Models 9200 and 9500 gauges is 6 months according to registration certificate GA-0716-D-103-S dated May 8, 2001. Please clarify the reference that procedure 1002067 (leak test and non-routine maintenance) will be performed "from 6 months to three years for other sources" since the registration certificate states 6 month leak test frequency for the approved radionuclides (Californium 252 and Cesium 137).

This will be changed to correspond to the six months allowed by the device registration.

B. Section titled Procedure – First bullet states: "The source lever may be locked in the OFF position for servicing…" The word "may" needs to be changed for "must" because the next sentence states that under no circumstances is the source lever to be locked in the ON position.

The statement is correct as stated. For purposes of the servicing outlined in this procedure, the source lever must not be locked, due to the various steps which require the movement of the source position lever for source shutter testing.

C. Section titled Preliminary – First item should clearly state to perform leak test following SABIA procedure 1002051 and to document the leak test result in the Nuclear Source Leak Test Report (SABIA 1002010). The current wording appears to indicate that only a form needs to be filled out.

A reference to leak test procedure 1002051 will be added.

D. Section titled "Wipe Procedure" – The following sentence is used in the procedure and it is incorrect: "A generally licensed user is authorized to collect contamination samples but not to perform the sample analysis." The reference to "generally" must be removed in all the procedures since it is contrary to a standard license condition in the NRC license issued to SABIA.

This statement will be removed from the procedure.

E. Section titled Device on/off Test and Wipe Test (Shutter Test) – Step 3.d. states: "If contaminated, contact site RSO and SABIA RSO immediately". Description of next steps is missing. Step 3.e. needs to direct the user to immediately stop work, immediately contact site RSO & SABIA RSO, and to follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

F. Section titled Device on/off Test and Wipe Test (Shutter Test) – Step 20 states: "If any contamination is found, notify site RSO and appropriate SABIA personnel". Description of next steps is missing. Step 15 needs to direct the user to immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking. The reference to procedure WI00022 appears to be incorrect.

This statement will be changed to add wording to IMMEDIATELY stop work, … A reference will be added to the SABIA emergency procedures 1002000.

G. Section titled Device on/off Test and Wipe Test (Shutter Test) - There should be a step directing the user to: If leak test results are negative, proceed with shutter test, if shutter test is applicable.

This note will be added.

H. Section titled Source Replacement – Step 3 states: "Verify that a leak test has been performed on the new sources." Step should state language similar to the following: "Verify that a leak test has been performed on the new sources and that results are negative for removable contamination. If the results are negative then proceed with source replacement. If the results indicate that the source(s) is/are leaking then immediately stop work, immediately contact the RSO, follow RSO instructions and/or engage in SABIA procedure XXX when a source is found to be leaking."

This note will be added.

I. The procedure needs to demonstrate this logic to the user. Please ensure that the procedure reflects this logic.

   i. While approaching the gauge take radiation measurements to ensure that external radiation levels are not exceeding those levels stated in the registration certificate (if abnormal levels are detected, stop work, call RSO); License No. 11-27727-01 Mail Control 472120

   ii. If levels are according to certificate, proceed to approach the gauge;

   iii. Proceed to take measurements at 1 meter and 30 cm;

   iv. Proceed with leak test (if source is leaking stop work, call RSO; if not leaking proceed with next step);

   v. Proceed with non-routine maintenance (shutter test) and/or proceed with source replacement (do leak test first).

All appropriate steps to ensure safe operation, proper maintenance, and correct, thorough, and complete servicing procedures have been incorporated into this procedure.