

Br. 2

Licensing Assistance Team
Division of Nuclear Materials Safety
U.S. Nuclear Regulatory Commission, Region I
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406-2713

RE: Request to Amend License 47-35296-01 03038909

To Whom It May Concern:

The purpose of this letter is to request an amendment to NRC radioactive materials license number 47-35296-01 issued to STS International (STS). STS is pursuing an amendment that would allow STS Authorized Users (AUs) to perform certain non-routine maintenance operations on licensed gauges. Specifically, the intended non-routine maintenance operations would allow STS to work on source holders, shutters, various motors, and install/de-install sources from gauges.

Eleven procedures have been prepared describing the specific operations. They involve replacing the source holder, shutters, and various motors on two types of gauges. The procedures are included in Attachment A.

Non-routine maintenance will be limited to STS radioactive materials supervisors. They are Alfonso Silva and Harold Carter. These individuals have received appropriate training regarding implementation of the non-routine maintenance procedures; their training record and copies of their training certificates are provided in Attachment B. Non-routine maintenance procedures will only be implemented by persons in possession of appropriate radiation detection instrumentation that meets the criteria in NUREG-1556 Volume 18. External radiation dose will be monitored with both whole body and extremity (ring) dosimeter badges obtained from a NVLAP accredited vendor. Proper implementation of these procedures will not result in doses which exceed any annual dose limit established by NRC.

The following steps will be implemented during non-routine maintenance activities:

- Radioactive source(s) will be under constant surveillance if not secured against unauthorized removal or access;
- Work areas will be posted with CAUTION RADIOACTIVE MATERIALS or CAUTION RADIATION AREA, as appropriate;
- All procedures will be implanted as written, in accordance with manufacturer's or distributor's instructions;
- All parts, components, materials (i.e., lubricants) used will be as recommended by the manufacturer or distributor. Should that not be possible, the item(s) in question will be evaluated to ensure that they do not degrade the engineering safety analysis performed and accepted as part of the original device registration; and
- Before being returned to routine use, the sealed source/device will be tested to verify that it functions as designed and the source integrity is not compromised.

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We also commit to ensuring that no persons occupying adjacent areas to the restricted areas where non-routine maintenance operations take place will receive a dose exceeding the dose limits established by NRC for members of the public. This will be confirmed by surveying exposure rates with an appropriate instrument and limiting access to these areas. Area surveys performed during non-routine maintenance operations will be maintained in our radiation safety files for a minimum of three years and will include the survey date, name of person performing the survey, instrument used (serial number and calibration information), and measured radiation levels.

Thank you for your attention to this amendment request.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'David Morgan', with a large, stylized flourish extending to the right.

David Morgan
Vice President Operations

Encls: Attachment A – Non-Routine Maintenance Procedures
Attachment B – AU training certificates

ATTACHMENT A
NON-ROUTINE MAINTENANCE PROCEDURES

1. Replace MMVACIS Source Motor
2. Replace MMVACIS Source
3. Replace MVACIS Shutter Gearmotor
4. Replace MVACIS Co60 Source Holder Assembly 2
5. Replace MVACIS Gearmotor Assembly
6. Replace R-VACIS (Primary) Source Actuator
7. Replace R-VACIS Co60 Source Holder Assembly
8. Replace R-VACIS Secondary Shutter Gearmotor
9. Replace R-VACIS Secondary Shutter
10. Replace VACISGT Source Motor
11. Replace VACISGT Source

Job Plan Data Sheet

Asset Number

Asset Name

Job Plan Number

Description

Duration (Hours)

| | | Duration (hours) | |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------|-----|
| Task | 10 | Perform Job Plan "Initial Safety Preparation Power Off" | 0.2 |
| Task | 20 | Make sure lock is in the source shutter to prevent source from opening while shutter linkage is off. | 0.1 |
| Task | 30 | remove outer metal covers of the source holder. | 0.5 |
| Task | 40 | Remove the shutter linkage from the top of the source motor. | 0.1 |
| Task | 50 | Remove the shutter linkage bracket off the source motor that holds the shutter linkage to motor. | 0.1 |
| Task | 60 | unplug the motor wires from the Out vehicle wiring harness. | 0.1 |
| Task | 70 | loosen all the allen bolts holding servo coupling to the motor shaft | 0.2 |
| Task | 80 | remove the four allen bolts holding the source motor to the source motor bracket. | 0.5 |
| Task | 90 | remove source motor from the bracket being careful not to damage the servo coupling. | 0.2 |
| Task | 100 | install new source motor thru the source motor bracket while at the same time sliding the servo coupling back onto the motor shaft. | 0.2 |
| Task | 110 | reinstall the four source motor allen bolts securing the motor back to the source motor bracket. | 0.2 |
| Task | 120 | tighten down the allen bolts on the servo coupling. | 0.2 |
| Task | 130 | reinstall the shutter linkage bracket back onto the source motor shaft. | 0.1 |
| Task | 140 | reinstall the shutter linkage to the source motor. | 0.1 |
| Task | 150 | plug source motor wires back into the Out Vehicles wiring harness. | 0.1 |
| Task | 160 | remove the source shutter lock. | 0.1 |
| Task | 170 | reinstall the metal covers of the source holder | 0.5 |
| Task | 180 | Perform job Plan "Function Test" and lock the source | 0.5 |
| Task | 190 | | |
| Task | 200 | | |
| Task | 210 | | |
| Task | 220 | | |
| Task | 230 | | |
| Task | 240 | | |
| Task | 260 | | |

Labor Data

| Craft Code | Quantity | Hours |
|------------|----------|-------|
| MMV | 1 | 4 |
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Parts/Materials Required

| Part Number | Description | Quantity |
|------------------|-----------------------|----------|
| 0205-03-0012-001 | source motor assembly | 1 |
| | | |
| | | |

Tools/Support Equipment Required

| Part Number | Description | Quantity |
|------------------|----------------------|----------|
| 6600-02-0100-001 | General FSR Tool Kit | 1 |
| | | |
| | | |
| | | |

Job Plan Data Sheet

Asset Number

Asset Name

Job Plan Number

Description

Duration (Hours)

| | | Duration (hours) | |
|------|-----|----------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Task | 10 | Perform Job Plan "Initial Safety Preparation Power Off" | 0.2 |
| Task | 20 | Make sure lock is in the source and perform source wipe test on old Source if not performed in the last 6 months. | 0.2 |
| Task | 30 | remove outer metal covers. | 0.5 |
| Task | 40 | Remove the shutter linkage from the top of the source holder (blue Pig) | 0.2 |
| Task | 50 | Remove the shutter motor from the source holder. | 0.2 |
| Task | 60 | Remove the battery box that houses the back up batteries to close the shutter in an emergency from the source holder (blue Pig) | 0.2 |
| Task | 70 | remove limit switches from the top of the source holder (blue Pig) making sure to mark the wires. | 0.2 |
| Task | 80 | remove the four bolts on both sides of the source holder connecting the source to the out vehicle source brackets. | 0.5 |
| Task | 90 | connect a lifting chain to the two lifting brackets on the source holder. | 0.1 |
| Task | 100 | using a forklift place the chains on the forks of the forklift and raise forks till the chain is tight but not lifting the source holder. | 0.2 |
| Task | 110 | from the bottom of the out vehicle remove the two 3/4 in bolts mounting the source to the out vehicle source box. | 0.1 |
| Task | 120 | slowly raise the source holder (blue Pig) out of the out vehicle and lowering the source to the ground. | 0.5 |
| Task | 130 | remove the chains and the lifting brackets off the old source and install on the new source. | 0.2 |
| Task | 140 | perform a wipe test on the new source | 0.1 |
| Task | 150 | raise the new source and slowly lower into the out vehicle making sure the holes for the mounting bolts line and install bolts finger tight. | 0.5 |
| Task | 160 | lower source holder and remove the chains and leaving the lifting brackets on the source. | 0.2 |
| Task | 170 | install the 4 bolts on both sides of the source holder the side mounting brackets on the out vehicle. | 0.2 |
| Task | 180 | intall the source motor | 0.5 |
| Task | 190 | intstall battery box that hoses the bak up batteries to close the shutter in an emergency. | 0.5 |
| Task | 200 | install the limit switch back on top the source making sure the wire are plugged back in correctly. | 0.5 |
| Task | 210 | install the shutter linkage back to the source motor | 0.2 |
| Task | 220 | reinstall the metal covers to the source box. | 0.5 |
| Task | 230 | Perform Job Plan "Function Test" and lock the source | 1 |
| Task | 240 | | |
| Task | 260 | | |

Labor Data

| Craft Code | Quantity | Hours |
|------------|----------|-------|
| GT (vtm) | 1 | 5.3 |
| | | |

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Parts/Materials Required

| Part Number | Description | Quantity |
|------------------|------------------|----------|
| 0014-03-0001-001 | source cobalt 60 | 1 |
| | | |
| | | |

Tools/Support Equipment Required

| Part Number | Description | Quantity |
|------------------|----------------------|----------|
| 6600-02-0100-001 | General FSR Tool Kit | 1 |
| 3514-03-0011-001 | Rad Meter | 1 |
| 3514-02-0005-001 | wipe test kit | 2 |
| | fork lift | 1 |
| | lifting chain | 1 |

Job Plan Data Sheet

Asset Number

Asset Name

Job Plan Number

Description

Duration (Hours)

| | | Duration (hours) | |
|------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Task | 10 | Position source enclosure to an open area where you can easily access all sides. | 0.17 |
| Task | 20 | Ensure the source is tilted all the way down and the locking pin is installed indicating the source shutter is closed. | 0.08 |
| Task | 30 | Perform Job Plan "Initial Safety Preparation Power Off" | 0.08 |
| Task | 40 | Remove the front source cover, (16 ea. ¼-20 screws and washers). Use the #3 Phillips screwdriver. | 0.08 |
| Task | 50 | Open the source shutter actuator box (4 ea. captured fasteners) using a ¼" standard screwdriver and disconnect the wires going to the shutter actuator "motor" | 0.17 |
| Task | 60 | Loosen allen screws on servo coupling attached to the Gearmotor shaft. | 0.05 |
| Task | 70 | Remove the 4 screws attaching the gearmotor to the gearmotor "housing" assembly. | 0.17 |
| Task | 80 | Slide the old gearmotor out and slide new gearmotor into the gearmotor "housing" assembly and servo coupling. | 0.17 |
| Task | 90 | Reinstall the 4 screws attaching the gearmotor to the gearmotor "housing" assembly. | 0.08 |
| Task | 100 | Tighten the allen screws on the servo coupling. | 0.05 |
| Task | 110 | Using a ¼" standard screwdriver reconnect the wires going to the shutter actuator "motor" assembly and close the source shutter actuator box. | 0.17 |
| Task | 120 | Replace the front source cover, (16 ea. ¼-20 screws and washers). Use the #3 Phillips screwdriver. | 0.08 |
| Task | 130 | Remove the source locking pin. | 0.02 |
| Task | 140 | Perform Job Plan function Test. | 0.5 |
| Task | 150 | | |
| Task | 160 | | |
| Task | 170 | | |
| Task | 180 | | |
| Task | 190 | | |
| Task | 200 | | |
| Task | 160 | | |
| Task | 170 | | |
| Task | 180 | | |
| Task | 190 | | |
| Task | 200 | | |

1.87

Labor Data

| Craft Code | Quantity | Hours |
|------------|----------|-------|
| MVACIS | 1 | 1.87 |

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Parts/Materials Required

| Part Number | Description | Quantity |
|------------------|-------------|----------|
| 0205-03-0015-001 | Gearmotor | 1 |
| | | |
| | | |

Tools/Support Equipment Required

| Part Number | Description | Quantity |
|------------------|----------------------|----------|
| 6600-02-0100-001 | General FSR Tool Kit | 1 |
| | | |
| | | |
| | | |

Job Plan Data Sheet

Asset Number

Asset Name

Job Plan Number

Description

Duration (Hours)

| | | Duration (hours) | |
|------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Task | 10 | Due to the DANGER of a crush hazard or being struck by MHE equipment it is recommended that you have two technicians perform the source removal and new Position source enclosure to an open area where you can easily access all sides. | 0.17 |
| Task | 20 | Ensure the source is tilted all the way down and the locking pin is installed with the source in the closed position. | 0.08 |
| Task | 30 | Remove the front and back source covers, (16 ea. ¼-20 screws and washers for each cover). Use the #3 Phillips screwdriver. | 0.17 |
| Task | 40 | Lower the source enclosure to the ground or to a strong platform that can hold the weight of the source enclosure. | 0.08 |
| Task | 50 | Perform Job Plan "Safety Power Off" | 0.08 |
| Task | 60 | Then remove the locking pin and insert combination lock, locking combo lock for transport. Have a calibrated RAD Meter on hand to ensure external source shutter is | 0.08 |
| Task | 70 | Perform Job Plan "Leak Test" if the Leak Test has not been done in the past 6 months. | 0.33 |
| Task | 80 | Open the source shutter actuator box (4 ea. captured fasteners) using a ¼" standard screwdriver and disconnect the wires going to the shutter actuator "motor" | 0.17 |
| Task | 90 | Remove the source shutter actuator box from its mounting bracket (4 ea. 10-32 x 1" socket head cap screws). Use the 5/32" Allen key. Let the box dangle from the wires that are attached to it. | 0.17 |
| Task | 100 | Remove the source shutter actuator box bracket. | 0.08 |
| Task | 110 | Remove the pin blocker from the face of the source (2 ea. ¼-20 x .75" socket head cap screws). Use a 3/16" Allen key. | 0.08 |
| Task | 120 | Remove the laser bracket from the face of the source (2 ea. ¼-20 x .5" hex head screws). Use the 7/16" socket or wrench. (If it has one.) | 0.08 |
| Task | 130 | Loosen Motor shaft pivot arm assy and remove from the motor shaft. | 0.17 |
| Task | 140 | Disconnect the source actuator "motor" limit switches (2). | 0.08 |
| Task | 150 | Unbolt and remove source Gearmotor Assembly. (2 bolts) | 0.08 |
| Task | 160 | Remove Mechanical Indicator Installation and Indicator Cable Assy from top of the source holder. | 0.17 |
| Task | 170 | Remove the source locking pin BLOCK. | 0.08 |
| Task | 180 | Remove source shaft limit switch bracket and its two limit switches. | 0.17 |
| Task | 190 | Loosen Shutter shaft pivot arm assy and remove along with attached pivot rod linkage assy and Motor shaft pivot arm assy. | 0.17 |
| Task | 200 | Remove the Source "PLC" Junction Box and let it hang by the cables so you can have access behind the sourceholder. You will have to disconnect some cables so | 0.25 |
| Task | 210 | Unbolt and remove the old source holder assembly sliding it onto the ground or a strong platform that you have the source enclosure resting on. | 0.33 |
| Task | 220 | Use MHE support to place the old source holder assembly onto a wood pallet for easy transport. | 0.17 |
| Task | 230 | Now use MHE support to help move the New Source Holder Assembly into position so you and another technician can slide it into the Source Frame Assembly's tilt | 0.33 |
| Task | 240 | Once the Source Holder Assembly is in the Source Frame Assembly correctly rebolt it in place. | 0.33 |
| Task | 250 | Perform Job Plan "Leak Test" and have a calibrated RAD Meter on hand for any radiation surveys needed. | 0.5 |
| Task | 260 | Reinstall the Source "PLC" Junction Box and any cables that were removed. | 0.25 |
| Task | 270 | Reinstall the pin blocker on the face of the source (2 ea. ¼-20 x .75" socket head cap screws). Use a 3/16" Allen key. | 0.08 |
| Task | 280 | Reinstall the laser bracket on the face of the source (2 ea. ¼-20 x .5" hex head screws). Use the 7/16" socket or wrench. (If it has one.) | 0.08 |
| Task | 290 | Reinstall the source shutter actuator box bracket. | 0.08 |
| Task | 300 | Reinstall the source Shutter Actuator Box Assembly. | 0.17 |

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|------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Task | 310 | Rebolt the source Gearmotor Assembly. (2 bolts) | 0.08 |
| Task | 320 | Using a ¼" standard screwdriver reconnect the wires going to the shutter actuator "motor" assembly into the source shutter actuator box. | 0.08 |
| Task | 330 | Reinstall the Shutter shaft pivot arm assy with the attached pivot rod linkage assy and Motor shaft pivot arm assy onto the source shutter shaft. | 0.17 |
| Task | 340 | Reinstall the Motor shaft pivot arm assy onto the actuator motor shaft. | 0.17 |
| Task | 350 | Reinstall source locking pin BLOCK. | 0.08 |
| Task | 360 | Reinstall the Mechanical Indicator Installation and Indicator Cable Assembly back onto the top of the source shutter shaft. | 0.17 |
| Task | 370 | Reconnect source actuator "motor" limit switches (2). | 0.17 |
| Task | 380 | Reconnect the source shaft limit switch bracket and its two limit switches. | 0.17 |
| Task | 390 | Replace and close the source shutter actuator box (4 ea. captured fasteners) | 0.08 |
| Task | 400 | Raise the source enclosure so you can have access to all sides. | 0.08 |
| Task | 410 | Remove the source combination lock and insert the source locking pin. | 0.08 |
| Task | 420 | Reinstall the front and back source covers, (16 ea. ¼-20 screws and washers for each cover). Use the #3 Phillips screwdriver. | 0.17 |
| Task | 430 | Remove the source locking pin. | 0.02 |
| Task | 440 | Perform Job Plan "Function Test" . | 0.5 |
| | | | 7.08 |

Labor Data

| Craft Code | Quantity | Hours |
|------------|----------|-------|
| MVACIS | 1 | 7.08 |
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Parts/Materials Required

| Part Number | Description | Quantity |
|------------------|-----------------------------|----------|
| 0014-03-0001-001 | Co60 Source Holder Assembly | 1 |
| | | |
| | | |

Tools/Support Equipment Required

| Part Number | Description | Quantity |
|------------------|------------------------|----------|
| 6600-02-0100-001 | General FSR Tool Kit | 1 |
| 3514-03-0011-001 | Rad Meter | 1 |
| 3514-02-0005-001 | Wipe Test Kit | 2 |
| | MHE / Forklift Support | 1 |
| | lifting chain / strap | 1 |

Job Plan Data Sheet

Asset Number

Asset Name

Job Plan Number

Description

Duration (Hours)

| | | Duration (hours) | |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Task | 10 | Position source enclosure to an open area where you can easily access all sides. | 0.17 |
| Task | 20 | Ensure the source is tilted all the way down and the locking pin is installed indicating the source shutter is closed. | 0.08 |
| Task | 30 | Perform Job Plan "Initial Safety Preparation Power Off" | 0.08 |
| Task | 40 | Remove the front source cover, (16 ea. ¼-20 screws and washers). Use the #3 Phillips screwdriver. | 0.08 |
| Task | 50 | Open the source shutter actuator box (4 ea. captured fasteners) using a ¼" standard screwdriver and disconnect the wires going to the shutter actuator "motor" | 0.17 |
| Task | 60 | Disconnect the source actuator "motor" limit switches (2) from the gearmotor assembly and let hang by their wires. | 0.08 |
| Task | 70 | Loosen the allen screws in the motor shaft pivot arm assy and pull up and off the gearmotor shaft. | 0.08 |
| Task | 80 | Unbolt and remove source Gearmotor Assembly. (2 bolts) | 0.08 |
| Task | 90 | Rebolt the new Gearmotor Assembly back onto the source holder. (2 bolts) | 0.08 |
| Task | 100 | Reconnect the source actuator "motor" limit switches (2) to the gearmotor assembly. | 0.08 |
| Task | 110 | Place the motor shaft pivot arm assy back onto the gearmotor shaft and tighten the allen screws. | 0.08 |
| Task | 120 | Using a ¼" standard screwdriver reconnect the wires from the new gearmotor assembly to the source shutter actuator box and close the source shutter actuator box. | 0.17 |
| Task | 130 | Replace the front source cover, (16 ea. ¼-20 screws and washers). Use the #3 Phillips screwdriver. | 0.08 |
| Task | 140 | Remove the source locking pin. | 0.02 |
| Task | 150 | Perform Job Plan Function Test. | 0.5 |
| Task | 160 | | |
| Task | 170 | | |
| Task | 180 | | |
| Task | 190 | | |
| Task | 200 | | |
| Task | 160 | | |
| Task | 170 | | |
| Task | 180 | | |
| Task | 190 | | |
| Task | 200 | | |

1.83

Labor Data

| Craft Code | Quantity | Hours |
|------------|----------|-------|
| MVACIS | 1 | 1.83 |
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Parts/Materials Required

| Part Number | Description | Quantity |
|------------------|----------------|----------|
| 0205-03-0012-001 | Gearmotor Assy | 1 |
| | | |
| | | |

Tools/Support Equipment Required

| Part Number | Description | Quantity |
|------------------|----------------------|----------|
| 6600-02-0100-001 | General FSR Tool Kit | 1 |
| | | |
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Job Plan Data Sheet

Asset Number

Asset Name

Job Plan Number

Description

Duration (Hours)

| | | Duration (hours) | |
|------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Task | 10 | Perform Job Plan "Initial Safety Preparation Power Off" | 0.17 |
| Task | 20 | Unlock and open the back source access door. | 0.08 |
| Task | 30 | Remove the environmental cabinet for easy access to the source actuator. | 0.08 |
| Task | 40 | Ensure both shutters are closed by putting source internal shutter in the closed position with the locking pin inserted and secondary shutter in the closed position. | 0.08 |
| Task | 50 | Disconnect the 7-pin cable attached to the top of the source junction box. | 0.08 |
| Task | 60 | Using a 1/2 in. wrench, remove the four bolts underneath the Source Actuator Mount that attach the Source "Primary" Actuator to the Source Housing. | 0.33 |
| Task | 70 | With your hands lift the Source Actuator straight up and out from the source enclosure. | 0.08 |
| Task | 80 | Place the new source actuator into the source enclosure making sure the shaft lines up with the new source actuator. | 0.08 |
| Task | 90 | Using a 1/2 in. wrench, tighten the four bolts underneath the Source Actuator Mount that attach the Source "Primary" Actuator to the Source Housing. | 0.33 |
| Task | 100 | Reconnect the 7-pin cable to the top of the junction box. | 0.08 |
| Task | 110 | Remove the source locking pin. | 0.08 |
| Task | 120 | Reinstall environmental cabinet. | 0.08 |
| Task | 130 | Lock the back source access door. | 0.08 |
| Task | 140 | Perform Job Plan "Function Test" | 0.5 |
| Task | 150 | | |
| Task | 160 | | |
| Task | 170 | | |
| Task | 180 | | |
| Task | 190 | | |
| Task | 200 | | |
| Task | 160 | | |
| Task | 170 | | |
| Task | 180 | | |
| Task | 190 | | |
| Task | 200 | | |

2.13

Labor Data

| Craft Code | Quantity | Hours |
|------------|----------|-------|
| R-VACIS | 1 | 2.13 |
| | | |

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Parts/Materials Required

| Part Number | Description | Quantity |
|-------------|---------------------------|----------|
| 391975-001 | Source "Primary" Actuator | 1 |
| | | |
| | | |

Tools/Support Equipment Required

| Part Number | Description | Quantity |
|------------------|----------------------|----------|
| 6600-02-0100-001 | General FSR Tool Kit | 1 |
| | | |
| | | |
| | | |

Job Plan Data Sheet

Asset Number

Asset Name

Job Plan Number

Description

Duration (Hours)

| | | Duration (hours) | |
|------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| | | Due to the DANGER of a crush hazard or being struck by MHE equipment it is recommended that you have two technicians perform the source removal and new | |
| Task | 10 | Perform Job Plan "Initial Safety Preparation Power Off" | 0.17 |
| Task | 20 | Unlock and open the back source access door. | 0.03 |
| Task | 30 | Remove the environmental cabinet for easy access to the Co 60 source and components. | 0.08 |
| Task | 40 | Ensure both shutters are closed by putting source internal shutter in the closed position with the locking pin inserted and secondary shutter in the closed position.*** | 0.08 |
| Task | 50 | Perform Job Plan "Leak Test" if the Leak Test has not been done in the past 6 months. | 0.33 |
| Task | 60 | Disconnect the 22 connector pin and 7-pin cables attached to the top of the Source Junction Box. | 0.08 |
| Task | 70 | Due to the weight of the Secondary Shutter, it is recommended that you have two Technicians perform this procedure. | |
| Task | 80 | Using a 3/4 in. wrench, remove the four mounting bolts on the back of the Secondary Shutter. | 0.33 |
| Task | 90 | With another Technician, remove the Secondary Shutter from the Source Enclosure and set it in a safe place. | 0.17 |
| Task | 100 | Using a 1/2 in. wrench, remove the four bolts underneath the Source "Primary" Actuator Mount that attach the Source Actuator to the Source Holder. | 0.33 |
| Task | 110 | With your hands lift the Source "Primary" Actuator straight up and out from the source enclosure. | 0.08 |
| Task | 120 | Using an Allen wrench, loosen and remove all four bolts that attach the blue Internal Source Holder to the Source Bracket. | 0.33 |
| Task | 130 | Attach a chain or tow strap to the source and route it to the lifting forks on the MHE equipment so you can lift the source up for removal safely. | 0.25 |
| Task | 140 | Lift up and remove the source out of the source cart platform and to a safe place preferably a pallet that can be easily moved. | 0.33 |
| Task | 150 | Attach a chain or tow strap to the NEW source and route it to the lifting forks on the MHE equipment so you can lift the source up for placement in the source cart | 0.25 |
| Task | 160 | Lift up the NEW source and place it onto the Source Bracket and its two retaining screws. | 0.5 |
| Task | 170 | Once in place lower the lifting forks and remove the strap or chains. | 0.08 |
| Task | 180 | Using an Allen wrench, install and tighten all four bolts that attach the blue Internal Source Holder to the Source Bracket. | 0.33 |
| Task | 190 | With another Technician, align the Secondary Shutter with the four holes in the Mounting Plate. | 0.17 |
| Task | 200 | Using a 3/4 in. wrench, insert and tighten the four mounting bolts on the back of the new Secondary Shutter. | 0.33 |
| Task | 160 | Place the source "Primary" actuator into the source enclosure making sure the shaft lines up with the New source actuator. | 0.08 |
| Task | 170 | Using a 1/2 in. wrench, insert and tighten the four bolts underneath the Source Actuator Mount that attach the Source Actuator to the Source Holder. | 0.33 |
| Task | 180 | Reconnect the 22 connector pin and 7-pin cables to the top of the Source Junction Box. | 0.08 |
| Task | 190 | Perform Job Plan "Leak Test" and have a calibrated RAD Meter on hand for any radiation surveys needed. | 0.5 |
| Task | 200 | Remove the source combination lock. | 0.03 |
| Task | 210 | Reinstall environmental cabinet and lock the back source access door. | 0.17 |
| Task | 220 | Perform Job Plan "Function Test" | 0.5 |
| Task | 230 | | |
| Task | 240 | | |
| Task | 250 | | |
| | | | 5.94 |

Labor Data

| Craft Code | Quantity | Hours |
|------------|----------|-------|
| R-VACIS | 1 | 5.94 |
| | | |
| | | |

Parts/Materials Required

| Part Number | Description | Quantity |
|------------------|----------------------------------|----------|
| 0014-03-0001-001 | Cobalt 60 Source Holder Assembly | 1 |
| | | |
| | | |

Tools/Support Equipment Required

| Part Number | Description | Quantity |
|------------------|------------------------|----------|
| 6600-02-0100-001 | General FSR Tool Kit | 1 |
| 3514-03-0011-001 | RAD Meter | 1 |
| 3514-02-0005-001 | Wipe Test Kit | 2 |
| | MHE / Forklift Support | 1 |
| | lifting chain / strap | 1 |

Job Plan Data Sheet

Asset Number

Asset Name

Job Plan Number

Description

Duration (Hours)

| | | Duration (hours) | |
|------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Task | 10 | Perform Job Plan "Initial Safety Preparation Power Off" | 0.17 |
| Task | 20 | Unlock and open the back source access door. | 0.08 |
| Task | 30 | Remove the enviromental cabinet for easy access to the secondary shutter motor. | 0.08 |
| Task | 40 | Ensure both shutters are closed by putting source internal shutter in the closed position with the locking pin inserted and secondary shutter in the closed position. | 0.08 |
| Task | 50 | Open the Source Junction Box and disconnct the wires going to the secondary shutter gearmotor. | 0.08 |
| Task | 60 | Remove the gearmotor wires from their fastners where they are just hanging from the gear motor. | 0.17 |
| Task | 70 | Loosen the allen screws from the pulley attached to the gearmotor shaft. | 0.05 |
| Task | 80 | Remove the 4 allen bolts that attach the gearmotor to the secondary shutter assembly pulling down away from the secondary shutter while letting the shaft slide out of the pulley. | 0.25 |
| Task | 90 | Take the new gearmotor and put it back into the scondary shutter at an angle and slide the pulley with the belt on it back onto the gearmotor shaft. | 0.08 |
| Task | 100 | Bolt the new gearmotor back to the secondary shutter assembly with the 4 allen bolts. | 0.25 |
| Task | 110 | Reconnect the gearmotor wires back to the Source junction Box routing them through their fastners. | 0.25 |
| Task | 120 | Reinstall the cover to the source junction box. | 0.05 |
| Task | 130 | Reinstall the enviromental cabinet. | 0.08 |
| Task | 140 | Remove the source locking pin. | 0.05 |
| Task | 150 | Close and lock the back soucre access door. | 0.05 |
| Task | 160 | Perform Job Plan "Function Test". | 0.5 |
| Task | 170 | | 2.27 |
| Task | 180 | | |
| Task | 190 | | |
| Task | 200 | | |
| Task | 160 | | |
| Task | 170 | | |
| Task | 180 | | |
| Task | 190 | | |
| Task | 200 | | |

Labor Data

| Craft Code | Quantity | Hours |
|------------|----------|-------|
| R-VACIS | 1 | 2.27 |
| | | |

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Parts/Materials Required

| Part Number | Description | Quantity |
|-------------|-------------|----------|
| 393833-001 | Gearmotor | 1 |
| | | |
| | | |

Tools/Support Equipment Required

| Part Number | Description | Quantity |
|------------------|----------------------|----------|
| 6600-02-0100-001 | General FSR Tool Kit | 1 |
| | | |
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Job Plan Data Sheet

Asset Number

Asset Name

Job Plan Number

Description

Duration (Hours)

| | | Duration (hours) | |
|------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Task | 10 | Perform Job Plan "Initial Safety Preparation Power Off" | 0.17 |
| Task | 20 | Unlock and open the back source access door. | 0.08 |
| Task | 30 | Remove the environmental cabinet for easy access to the secondary shutter motor. | 0.08 |
| Task | 40 | Ensure both shutters are closed by putting source internal shutter in the closed position with the locking pin inserted and secondary shutter in the closed position. | 0.08 |
| Task | 50 | Disconnect the 22 connector pin and 7-pin cables attached to the top of the Source Junction Box. | 0.08 |
| | | Due to the weight of the Secondary Shutter, it is recommended that you have two Technicians perform this procedure. | |
| Task | 60 | Using a ¾ in. wrench, remove the four mounting bolts on the back of the Secondary Shutter. | 0.33 |
| Task | 70 | With another Technician, remove the Secondary Shutter from the Source Enclosure and set it in a safe place. | 0.17 |
| | | | |
| Task | 80 | With another Technician, align the new Secondary Shutter with the four holes in the Mounting Plate. | 0.17 |
| Task | 90 | Using a ¾ in. wrench, tighten the four mounting bolts on the back of the new Secondary Shutter. | 0.33 |
| | | | |
| Task | 100 | Reconnect the 22 connector pin and 7-pin cables to the top of the Source Junction Box. | 0.08 |
| Task | 110 | Remove the source locking pin. | 0.08 |
| | | | |
| Task | 120 | Reinstall environmental cabinet. | 0.08 |
| Task | 130 | Lock the back source access door. | 0.08 |
| Task | 140 | Perform Job Plan "Function Test" | 0.5 |
| Task | 150 | | |
| Task | 160 | | |
| Task | 170 | | |
| Task | 180 | | |
| Task | 190 | | |
| Task | 200 | | |
| Task | 160 | | |
| Task | 170 | | |
| Task | 180 | | |
| Task | 190 | | |
| Task | 200 | | |

2.31

Labor Data

| Craft Code | Quantity | Hours |
|------------|----------|-------|
| R-VACIS | 1 | 2.31 |

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Parts/Materials Required

| Part Number | Description | Quantity |
|-------------|-------------------|----------|
| 320421-001 | Secondary shutter | 1 |
| | | |
| | | |

Tools/Support Equipment Required

| Part Number | Description | Quantity |
|------------------|----------------------|----------|
| 6600-02-0100-001 | General FSR Tool Kit | 1 |
| | | |
| | | |
| | | |

Job Plan Data Sheet

Asset Number

Asset Name

Job Plan Number

Description

Duration (Hours)

| | | Duration (hours) | |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------|-----|
| Task | 10 | Perform Job Plan "Initial Safety Preparation Power Off" | 0.2 |
| Task | 20 | Make sure lock is in the source shutter to prevent source from opening while shutter linkage is off. | 0.1 |
| Task | 30 | remove outer metal covers of the source holder. | 0.5 |
| Task | 40 | Remove the shutter linkage from the top of the source motor. | 0.1 |
| Task | 50 | Remove the shutter linkage bracket off the source motor that holds the shutter linkage to motor. | 0.1 |
| Task | 60 | unplug the motor wires from the Out vehicle wiring harness. | 0.1 |
| Task | 70 | loosen all the allen bolts holding servo coupling to the motor shaft | 0.2 |
| Task | 80 | remove the four allen bolts holding the source motor to the source motor bracket. | 0.5 |
| Task | 90 | remove source motor from the bracket being careful not to damage the servo coupling. | 0.2 |
| Task | 100 | install new source motor thru the source motor bracket while at the same time sliding the servo coupling back onto the motor shaft. | 0.2 |
| Task | 110 | reinstall the four source motor allen bolts securing the motor back to the source motor bracket. | 0.2 |
| Task | 120 | tighten down the allen bolts on the servo coupling. | 0.2 |
| Task | 130 | reinstall the shutter linkage bracket back onto the source motor shaft. | 0.1 |
| Task | 140 | reinstall the shutter linkage to the source motor. | 0.1 |
| Task | 150 | plug source motor wires back into the Out Vehicles wiring harness. | 0.1 |
| Task | 160 | remove the source shutter lock. | 0.1 |
| Task | 170 | reinstall the metal covers of the source holder | 0.5 |
| Task | 180 | Perform job Plan "Function Test" and lock the source | 0.5 |
| Task | 190 | | |
| Task | 200 | | |
| Task | 210 | | |
| Task | 220 | | |
| Task | 230 | | |
| Task | 240 | | |
| Task | 260 | | |

Labor Data

| Craft Code | Quantity | Hours |
|------------|----------|-------|
| GT (vtm) | 1 | 4 |
| | | |

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Parts/Materials Required

| Part Number | Description | Quantity |
|------------------|-----------------------|----------|
| 0205-03-0012-001 | source motor assembly | 1 |
| | | |
| | | |

Tools/Support Equipment Required

| Part Number | Description | Quantity |
|------------------|----------------------|----------|
| 6600-02-0100-001 | General FSR Tool Kit | 1 |
| | | |
| | | |
| | | |

Job Plan Data Sheet

Asset Number

Asset Name

Job Plan Number

Description

Duration (Hours)

| | | Duration (hours) | |
|------|-----|----------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Task | 10 | Perform Job Plan "Initial Safety Preparation Power Off" | 0.2 |
| Task | 20 | Make sure lock is in the source and perform source wipe test on old Source if not performed in the last 6 months. | 0.2 |
| Task | 30 | remove outer metal covers. | 0.5 |
| Task | 40 | Remove the shutter linkage from the top of the source holder (blue Pig) | 0.2 |
| Task | 50 | Remove the shutter motor from the source holder. | 0.2 |
| Task | 60 | Remove the Secondary source shutter from the source holder (blue Pig) | 0.2 |
| Task | 70 | remove limit switches from the top of the source holder (blue Pig) making sure to mark the wires. | 0.2 |
| Task | 80 | remove the four bolts on both sides of the source holder connecting the source to the out vehicle source brackets. | 0.5 |
| Task | 90 | connect a lifting chain to the two lifting brackets on the source holder. | 0.1 |
| Task | 100 | using a forklift place the chains on the forks of the forklift and raise forks till the chain is tight but not lifting the source holder. | 0.2 |
| Task | 110 | from the bottom of the out vehicle remove the two 3/4 in bolts mounting the source to the out vehicle source box. | 0.1 |
| Task | 120 | slowly raise the source holder (blue Pig) out of the out vehicle and lowering the source to the ground. | 0.5 |
| Task | 130 | remove the chains and the lifting brackets off the old source and install on the new source. | 0.2 |
| Task | 140 | perform a wipe test on the new source | 0.1 |
| Task | 150 | raise the new source and slowly lower into the out vehicle making sure the holes for the mounting bolts line and install bolts finger tight. | 0.5 |
| Task | 160 | lower source holder and remove the chains and leaving the lifting brackets on the source. | 0.2 |
| Task | 170 | install the 4 bolts on both sides of the source holder the side mounting brackets on the out vehicle. | 0.2 |
| Task | 180 | intall the source motor | 0.5 |
| Task | 190 | intstall secondary source sutter | 0.5 |
| Task | 200 | install the limit switch back on top the source making sure the wire are plugged back in correctly. | 0.5 |
| Task | 210 | install the shutter linkage back to the source motor | 0.2 |
| Task | 220 | reinstall the out covers to the source box. | 0.5 |
| Task | 230 | Perform Job Plan "Function Test" and lock the source | 1 |
| Task | 240 | | |
| Task | 260 | | |

Labor Data

| Craft Code | Quantity | Hours |
|------------|----------|-------|
| GT (vtm) | 1 | 5.3 |

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Parts/Materials Required

| Part Number | Description | Quantity |
|------------------|------------------|----------|
| 0014-03-0001-001 | source cobalt 60 | 1 |
| | | |
| | | |

Tools/Support Equipment Required

| Part Number | Description | Quantity |
|------------------|----------------------|----------|
| 6600-02-0100-001 | General FSR Tool Kit | 1 |
| 3514-03-0011-001 | Rad Meter | 1 |
| 3514-02-0005-001 | wipe test kit | 2 |
| | fork lift | 1 |
| | lifting chain | 1 |

ATTACHMENT B
AUTHORIZED USER TRAINING RECORD AND CERTIFICATES

Alfonso Silva
Harold Carter



INTEGRATED SOLUTIONS FOR A SECURE FUTURE

TO: Licensing Assistance Team; Division of Nuclear Materials Safety; U.S. Nuclear Regulatory Commission, Region I

FROM: Program Manager, Non-Intrusive Inspection Systems, STS International, Inc.

DATE: 28 April 2018

SUBJECT: Verification of VACIS Non-Routine Maintenance Procedure Training for Alfonso Silva and Harold Carter

The following STS International, Inc. employees have received VACIS Non-Routine Maintenance Procedure training for the eleven (11) procedures listed in Attachment A of this license amendment request for NRC radioactive materials license number 47-35296-01.

1. Alfonso Silva
 - a. OEM (SAIC) training course
 - i. Dates: 4-31 Aug 2007
 - ii. Location: SAIC training facility
 - b. On the Job Training
 - i. Dates: Apr-Sep 2014
 - ii. Instructor: Lloyd Thomas
 - iii. Location: Afghanistan, various locations
 - c. Radiation Safety Officer
 - i. Dates: 11-15 Jan 2016
 - ii. Instructor: Dade Moeller Training Academy
 - iii. Location: Gaithersburg, MD
2. Harold Carter
 - a. On the Job Training
 - i. Dates: Sep 2009-Dec 2011

STS International, Inc.
1225 South Clark Street, Suite 1300 Arlington, VA 22202
Phone: 703-575-5180 Fax: 703-575-5181

- ii. Instructor: Gustavo Mariano (SAIC certified Field Support Representative)
 - iii. Location: Iraq, various locations
- b. Radiation Safety Officer
 - i. Dates: 23-27 Jul 2012
 - ii. Instructor: Nevada Technical Associates, Inc.
 - iii. Location: Arlington, TX
- 3. Point of contact for this memorandum is David N. Vandivort, Program Manager, david.vandivort@stsint.com, 703-575-5185.



David N. Vandivort
Program Manager
STS International, Inc.

Certificate of Training

Awarded To

Alfonso Silva

Recognizing completion of 40 hours of specialized instruction in

Radiation Safety Officer

January 15, 2016

Presented By

Dade Moeller Training Academy

438 N. Frederick Avenue, Suite 220, Gaithersburg, MD 20877

www.moellerinc.com/academy -- 301-990-6006

AAHP has awarded this course 40 Continuing Education Credits, 2014-00-051 (AS-289)

ABIH Diplomates can claim this course for 40 hours in the IH CM Area



Alan L. Fellman, PhD, CHP



Harold Carter

Has successfully completed the 40 hour technical short course entitled

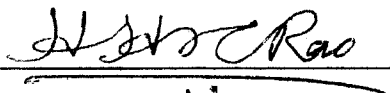
Radiation Safety Officer

July 23, 2012 – July 27, 2012

This certificate presented in Arlington, Texas, July 27, 2012

By Nevada Technical Associates, Inc.

Approval codes for C.E. units are: ASRT 30.5 units: NVZ0146001, AAHP 32 units: 2008-00-005, ABIH 4.5 units: 08-1362



Hermon Rao

Instructor

Certificate Number: 1343026833



ACKNOWLEDGEMENT - RECEIPT OF CORRESPONDENCE

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Name and Address of Applicant and/or Licensee David Morgan Vice President, Operations STS International, Inc. 1225 South Clark Street Suite 1300 Arlington, Virginia 22202 | Date May 14, 2018 |
| | License Number(s) 47-35296-01 |
| | Mail Control Number(s) 608763 |
| | Licensing and/or Technical Reviewer or Branch Commercial, Industrial, R&D, and Academic Branch Rec'd in RI on 05/08/18 |

This is to acknowledge receipt of your: Letter and/or Application Dated: _____

The initial processing, which included an administrative review, has been performed.
 Amendment Termination New License Renewal

There were no administrative omissions identified during our initial review.

This is to acknowledge receipt of your application for renewal of the material(s) license identified above. Your application is deemed timely filed, and accordingly, the license will not expire until final action has been taken by this office.

Your application for a new NRC license did not include your taxpayer identification number. Please complete and submit NRC Form 531, Request for Taxpayer Identification Number, located at the following link: <http://www.nrc.gov/reading-rm/doc-collections/forms/nrc531.pdf>
 Follow the instructions on the form for submission.

The following administrative omissions have been identified:

Your application has been assigned the above listed MAIL CONTROL NUMBER. When calling to inquire about this action, please refer to this control number. Your application has been forwarded to a technical reviewer. Please note that the technical review, which is normally completed within 180 days for a renewal application (90 days for all other requests), may identify additional omissions or require additional information. If you have any questions concerning the processing of your application, our contact information is listed below:

| |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Region I U. S. Nuclear Regulatory Commission Division of Nuclear Materials Safety 2100 Renaissance Boulevard, Suite 100 King of Prussia, PA 19406-2713 (610) 337-5260, (610) 337-5313, (610) 337-5398, (610) 337-5239 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|