

Statement of Work

SLD E-Learning Module Development

Revision 0
8/14/2014

1.0 Background

The U.S. Department of Energy/National Nuclear Security Administration's (DOE/NNSA's) Office of the Second Line of Defense (SLD) works with partner countries to strengthen their overall capability and commitment to deter, detect, and interdict special nuclear materials and other radioactive materials out of regulatory control. The SLD Program provides comprehensive support to partner countries in meeting the training needs associated with operating, maintaining, and managing their radiation detection system. This country-specific training support addresses the needs encountered in all phases of the partner country's progression to assuming the full responsibilities of sustaining the nuclear security measures: before and during system startup as well as periodic refresher training, performance evaluation, and continued mentorship support during and after the SLD Program transition period.

2.0 Training Need

The principal goal of the SLD Program training element is to assist partner countries in becoming as self-sufficient as possible in designing, developing, and delivering the training necessary to sustain the operations, maintenance, and management of their radiation detection system. The SLD Program conducts initial radiation detection operator training at international border crossings, airports, and seaports. This training consists of both general and site-specific topics required for operators to detect and interdict illicit radioactive material. Since some of the topics/tasks are easily forgotten as they may not be performed on a frequent basis, initial and periodic refresher training is required to keep these skills and knowledge current. Training topics are yet to be determined but may include the following: SLD Program Overview, Radiation Awareness/Operator Safety, and/or Central Alarm Station Overview/Operation.

As part of the larger training curriculum, the goal of these e-learning modules is to supplement and where possible, substitute for instructor-led classroom training. Depending upon the subject matter, completion of the training may require an instructor or an experienced user to lead an accompanying performance-based training/assessment to verify the student's proper execution. These e-learning modules will be leave-behind tools for SLD partner countries, used for both initial and refresher training.

3.0 Overview of Scope

The contractor shall provide five performance-based, e-learning modules on topics/functions related to operations, training, and/or maintenance of SLD deployed equipment. For the purposes of this SOW, a module is defined as related materials/activities intended to take the place of a course or one or more lessons within a course. The anticipated length of time for an end user to complete a given module is approximately one hour. Each module shall contribute to one or more functional knowledge/skill areas necessary to allow SLD operators, maintenance personnel, trainers, or other stakeholders to practice and apply operator and/or maintenance activities. The contractor shall build the e-learning training using the Articulate Storyline tool.

4.0 Target Population

The target population may include operators, maintenance personnel, trainers, and/or other stakeholders within the partner country. The target population may be taking the training for the first time or as a refresher. A given module may also be used as a prerequisite for other training courses, including instructor-led practical exercises.

5.0 Instructional Strategy

The module of instruction shall be performance-based and web-deliverable with the primary focus on meaningful interactive practice activities/knowledge checks for the student. Students shall be free to practice and repeat sections/exercises until a 100% success rate is achieved.

Two variants of each module shall be created based on the same material, one for Initial Training, and another for Refresher Training. In the Initial Training, students shall be required to complete all material/sections of the module. In the Refresher Training, students shall be able to navigate freely to the desired topics/activities. Refresher training is not tracked due to this free navigation, and completion certificates/LMS support will not be required for this variant.

The scenario-based activities shall incorporate realistic SLD situations. Exercise scenarios shall be provided by PNNL for incorporation into the modules. Module content shall be provided using audio, video, animations, graphics, and text. Course content shall be created by the vendor under the direction of PNNL.

Each module shall represent either a formal course or content from one or more courses/lessons, which shall serve as professional development and refresher training for the target population. Performance-based activities and situational, scenario-based multiple-choice assessments shall be incorporated into the modules. Review points shall be included throughout the learning path to facilitate long-term retention of the material. Each module shall support the ability to be integrated into a Learning Management System, including the ability to track successful completion. The modules shall support the option to create completion certificates for the e-learning portion with an additional sign off by an instructor or experienced user verifying the student's practical demonstration of the completed module.

6.0 Module Development

The schedule for each module shall follow an iterative development cycle divided into two week segments (or sprints), after which the contractor will be expected to demonstrate the activities performed. This methodology will facilitate identification of changes/revisions, as well as any obstacles before the fully integrated project is delivered for PNNL review. Weekly status meetings shall be held with the contractor, PNNL Instructional Designer and TOR to update progress towards objectives and identify any obstacles. These meetings will be conducted via teleconference utilizing Microsoft Lync so that contractor can demonstrate progress and work collaboratively with the PNNL team.

6.1 Kick-Off Meeting

The development of each module will commence with a Kick-Off Meeting led by the TOR and designated PNNL Instructional Designer. This meeting will identify the topic of the module, define an initial schedule, and include the team of PNNL Subject Matter Experts (SMEs), Instructional Designers (PNNL & contractor), & E-Learning Developers (contractor).

6.2 Module Development Meetings

Following the Kick-Off Meeting, a series of three half-day to full-day Development Meetings will occur to identify training objectives and relevant activities for the selected module. These meetings will take place at PNNL's Richland, WA campus. Attendees will include the SMEs, Instructional Designers (both from PNNL and the contractor), and E-Learning Developers (contractor). Interactive activities/animations that may require preliminary development/prototyping will be identified in these meetings.

6.3 Prototype/Design Document Review Meetings

After the initial development meetings PNNL Instructional Designers and SMEs, along with the contractor's Instructional Designers and E-Learning Developers, shall collaborate on collecting related materials/documents, establishing the draft User Interface design (which can be re-used in later modules), begin writing training introduction, and prototyping activities. This initial development phase and any iterative prototyping shall be scheduled to conclude no more than four weeks (after one (1) or two (2), two-week prototype iterations) after the initial development meetings. At the end of each two-week iteration, the contractor will meet with PNNL onsite or at the contractor's location (if local) to review materials.

6.4 Design Document and Test Plan

At the end of this phase, the Contractor shall submit a Design Document for the module, including a Test Plan and any action maps, activity prototypes, video storyboards, or other materials to PNNL for review and approval. PNNL shall review the submission and provide comments and feedback within seven (7) days.

6.5 Development and Development Review Meetings

Upon approval of the design documents, full development & integration (alpha development) of the module shall begin. The contractor shall collaborate with the PNNL Instructional Designer and SMEs during this phase to schedule discrete activities and deliverables for each of the three (3) two-week iterations. The contractor shall produce test cases for the materials developed as part of each iteration. The contractor shall also perform a review of the developed content for grammar and syntax issues prior to each demonstration and make corrections where appropriate. At the end of each two-week iteration, the contractor will meet with PNNL onsite or at the contractor's location (if local) to demonstrate/review materials. This phase is anticipated to last six (6) weeks (or up to three (3) iterations, as necessary).

6.6 Draft Module and Test Report

Upon conclusion of the module development and completion of Development, the contractor shall provide PNNL with the fully integrated module (including all content and multimedia/interactive activities) and a Test Report for review and approval. The fully integrated model shall include both the Initial Training variant and the Refresher Training variant as defined in Section 5.0, Instructional Strategy.

6.7 Completed Module Review

PNNL will review the complete module and provide a list of any required changes to the contractor within 14 days of submission. The contractor shall make the required changes and provide a new draft of the fully integrated module for final review and approval.

6.8 PNNL Approval

Upon final approval by PNNL, the contractor shall provide the published Module including source files (e.g., source code, 3D object files, Photoshop/Illustrator files, multimedia files) for any media embedded in the training and an archive copy of the course.

7.0 Module Implementation

The course will be given to partner countries for implementation. The course may be offered on individual computers, portable electronic media (e.g., DVD, USB Flash, or portable hard-drive), and over a network with a secure web link for access by a limited audience. It may also be available on a PNNL network. Each module shall have the ability to print a completion certificate. Each module shall be developed to support integration into Learning Management System complying with either SCORM or AICC standards.

PNNL's SLD team will maintain the content in the future. The Contractor shall use Articulate Storyline, an off-the-shelf authoring tool. The contractor shall provide all source files (e.g., source code, 3D object files, Photoshop/Illustrator files, multimedia files) for any media embedded in the training and an archive copy of the course. The SLD team will translate the content into other languages, so the design and development shall employ the following translation best practices:

- All text contained in the training must be readily accessible for translation (including text in graphics, animations, interactions, and source code).
- Ensuring that screen layout is flexible to support translated text of varying lengths.
- For any items requiring narration, all content must also be included as text in the training so that a translation is available without re-recording the narration.

8.0 Verification & Validation

The contractor shall meet the following minimum verification & validation requirements:

- Document a test plan for each module developed, including a description of the selected test method (manual versus automated testing), test case development, and bug tracking/reporting.)
- Test Case planning includes characteristics to be tested and the test methods to be employed.
- Document each test case per requirement or story.
- Execute tests to verify the software against specified requirements. Test the software to check that it provides what is wanted without any unintended effects.
- Document each test case and test results as part of the Test Report and evaluate if acceptance criteria are met.
- Identify, track, and report issues/bugs identified during the project life cycle in a spreadsheet/table format that will be discussed in the Weekly Project Management Meeting.
- Establish and maintain configuration management.

9.0 Deliverables

Each module is expected to take approximately 18-20 weeks to develop from topic selection. Some tasks stated below can be completed simultaneously. Project dates and review dates will be determined at project kickoff. With the exception of the draft fully integrated module, review of each listed deliverable is scheduled to take approximately 1 week. The following deliverables will be presented to the SLD team for review and approval. Regular project status and material review meetings shall be established.

Module 1 Deliverable Schedule

Deliverable	SOW Section	Description	Due Date
9.1.1	6.1	Contractor shall attend Kick-Off Meeting	TBD
9.2.1	6.2	Contractor shall attend the Module Development Meetings including drafting of the design document	TBD
9.3.1	6.3	Contractor shall attend Prototype/Design Document Review Meetings	After each two-week prototyping iteration
9.3.1.1	6.3	Prototype/Design Document Review Meeting 1	
9.3.1.2	6.3	Prototype/Design Document Review Meeting 2	
9.4.1	6.3 - 6.4	Contractor shall submit a Design Document for the module (including a Test Plan and any action maps, activity prototypes, video storyboards, or other materials developed for the module) and shall submit a draft User Interface for Review/Approval	Not later than four weeks after 9.2.1
9.5.1	6.3	Submit Draft User Interface for Review/Approval	Not later than four weeks after 9.2.1
9.6.1	6.5	Contractor shall attend Development Review Meetings and provide notes and a list of action items.	After each two-week development iteration
9.6.1.1		Development Review Meeting 1 and notes/list of action items.	
9.6.1.2		Development Review Meeting 2 and notes/list of action items.	
9.6.1.3		Development Review Meeting 3 and notes/list of action items.	
9.7.1	6.6	Submit draft of Completed Module and completed Test Report for PNNL Training Program Review	Not later than six weeks after 9.2.1
9.8.1	6.7	Contractor shall make any changes requested by PNNL and provide a	Not later than one week after receipt

		new draft of the fully integrated module.	of PNNL's requested changes
9.9.1	6.8	Submit final PNNL approved versions of published Module in the required formats	Not later than 14 days after approval by PNNL
9.10.1	6.0	Contractor shall attend weekly Project Management Status Meetings using Microsoft Lync/teleconference and provide a list of notes/action items	Weekly during development/review

Module 2 Deliverable Schedule

Deliverable	SOW Section	Description	Due Date
9.1.2	6.1	Contractor shall attend Kick-Off Meeting	TBD
9.2.2	6.2	Contractor shall attend the Module Development Meetings including drafting of the design document	TBD
9.3.2	6.3	Contractor shall attend Prototype/Design Document Review Meetings	After each two-week prototyping iteration
9.3.2.1	6.3	Prototype/Design Document Review Meeting 1	
9.3.2.2	6.3	Prototype/Design Document Review Meeting 2	
9.4.2	6.3 - 6.4	Contractor shall submit a Design Document for the module (including a Test Plan and any action maps, activity prototypes, video storyboards, or other materials developed for the module) and shall submit a draft User Interface for Review/Approval	Not later than four weeks after 9.2.1
9.5.2	6.3	Submit Draft User Interface for Review/Approval	Not later than four weeks after 9.2.1
9.6.2	6.5	Contractor shall attend Development Review Meetings and provide notes and a list of action items.	After each two-week development iteration

9.6.2.1		Development Review Meeting 1 and notes/list of action items.	
9.6.2.2		Development Review Meeting 2 and notes/list of action items.	
9.6.2.3		Development Review Meeting 3 and notes/list of action items.	
9.7.2	6.6	Submit draft of Completed Module and completed Test Report for PNNL Training Program Review	Not later than six weeks after 9.2.1
9.8.2	6.7	Contractor shall make any changes requested by PNNL and provide a new draft of the fully integrated module.	Not later than one week after receipt of PNNL's requested changes
9.9.2	6.8	Submit final PNNL approved versions of published Module in the required formats	Not later than 14 days after approval by PNNL
9.10.2	6.0	Contractor shall attend weekly Project Management Status Meetings using Microsoft Lync/teleconference and provide a list of notes/action items	Weekly during development/review

Module 3 Deliverable Schedule

Deliverable	SOW Section	Description	Due Date
9.1.3	6.1	Contractor shall attend Kick-Off Meeting	TBD
9.2.3	6.2	Contractor shall attend the Module Development Meetings including drafting of the design document	TBD
9.3.3	6.3	Contractor shall attend Prototype/Design Document Review Meetings	After each two-week prototyping iteration
9.3.3.1	6.3	Prototype/Design Document Review Meeting 1	
9.3.3.2	6.3	Prototype/Design Document Review Meeting 2	
9.4.3	6.3 - 6.4	Contractor shall submit a Design Document for the module (including a Test Plan and any	Not later than four weeks after 9.2.1

		action maps, activity prototypes, video storyboards, or other materials developed for the module) and shall submit a draft User Interface for Review/Approval	
9.5.3	6.3	Submit Draft User Interface for Review/Approval	Not later than four weeks after 9.2.1
9.6.3	6.5	Contractor shall attend Development Review Meetings and provide notes and a list of action items.	After each two-week development iteration
9.6.3.1		Development Review Meeting 1 and notes/list of action items.	
9.6.3.2		Development Review Meeting 2 and notes/list of action items.	
9.6.3.3		Development Review Meeting 3 and notes/list of action items.	
9.7.3	6.6	Submit draft of Completed Module and completed Test Report for PNNL Training Program Review	Not later than six weeks after 9.2.1
9.8.3	6.7	Contractor shall make any changes requested by PNNL and provide a new draft of the fully integrated module.	Not later than one week after receipt of PNNL's requested changes
9.9.3	6.8	Submit final PNNL approved versions of published Module in the required formats	Not later than 14 days after approval by PNNL
9.10.3	6.0	Contractor shall attend weekly Project Management Status Meetings using Microsoft Lync/teleconference and provide a list of notes/action items	Weekly during development/review

Module 4 Deliverable Schedule

Deliverable	SOW Section	Description	Due Date
9.1.4	6.1	Contractor shall attend Kick-Off Meeting	TBD
9.2.4	6.2	Contractor shall attend the Module Development Meetings including	TBD

		drafting of the design document	
9.3.4	6.3	Contractor shall attend Prototype/Design Document Review Meetings	After each two-week prototyping iteration
9.3.4.1	6.3	Prototype/Design Document Review Meeting 1	
9.3.4.2	6.3	Prototype/Design Document Review Meeting 2	
9.4.4	6.3 - 6.4	Contractor shall submit a Design Document for the module (including a Test Plan and any action maps, activity prototypes, video storyboards, or other materials developed for the module) and shall submit a draft User Interface for Review/Approval	Not later than four weeks after 9.2.1
9.5.4	6.3	Submit Draft User Interface for Review/Approval	Not later than four weeks after 9.2.1
9.6.4	6.5	Contractor shall attend Development Review Meetings and provide notes and a list of action items.	After each two-week development iteration
9.6.4.1		Development Review Meeting 1 and notes/list of action items.	
9.6.4.2		Development Review Meeting 2 and notes/list of action items.	
9.6.4.3		Development Review Meeting 3 and notes/list of action items.	
9.7.4	6.6	Submit draft of Completed Module and completed Test Report for PNNL Training Program Review	Not later than six weeks after 9.2.1
9.8.4	6.7	Contractor shall make any changes requested by PNNL and provide a new draft of the fully integrated module.	Not later than one week after receipt of PNNL's requested changes
9.9.4	6.8	Submit final PNNL approved versions of published Module in the required formats	Not later than 14 days after approval by PNNL
9.10.4	6.0	Contractor shall attend weekly Project Management Status	Weekly during

		Meetings using Microsoft Lync/teleconference and provide a list of notes/action items	development/review
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Module 5 Deliverable Schedule

Deliverable	SOW Section	Description	Due Date
9.1.5	6.1	Contractor shall attend Kick-Off Meeting	TBD
9.2.5	6.2	Contractor shall attend the Module Development Meetings including drafting of the design document	TBD
9.3.5	6.3	Contractor shall attend Prototype/Design Document Review Meetings	After each two-week prototyping iteration
9.3.5.1	6.3	Prototype/Design Document Review Meeting 1	
9.3.5.2	6.3	Prototype/Design Document Review Meeting 2	
9.4.5	6.3 - 6.4	Contractor shall submit a Design Document for the module (including a Test Plan and any action maps, activity prototypes, video storyboards, or other materials developed for the module) and shall submit a draft User Interface for Review/Approval	Not later than four weeks after 9.2.1
9.5.5	6.3	Submit Draft User Interface for Review/Approval	Not later than four weeks after 9.2.1
9.6.5	6.5	Contractor shall attend Development Review Meetings and provide notes and a list of action items.	After each two-week development iteration
9.6.5.1		Development Review Meeting 1 and notes/list of action items.	
9.6.5.2		Development Review Meeting 2 and notes/list of action items.	
9.6.5.3		Development Review Meeting 3 and notes/list of action items.	

9.7.5	6.6	Submit draft of Completed Module and completed Test Report for PNNL Training Program Review	Not later than six weeks after 9.2.1
9.8.5	6.7	Contractor shall make any changes requested by PNNL and provide a new draft of the fully integrated module.	Not later than one week after receipt of PNNL's requested changes
9.9.5	6.8	Submit final PNNL approved versions of published Module in the required formats	Not later than 14 days after approval by PNNL
9.10.5	6.0	Contractor shall attend weekly Project Management Status Meetings using Microsoft Lync/teleconference and provide a list of notes/action items	Weekly during development/review

Period of Performance

The period of performance for this contract shall be from contract award to September 30, 2017.