Valve Funnel Spring Pin Press Performance and Functional Requirements Evaluation for Special Tools and Equipment

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Abstract: This evaluation allows use of the valve funnel spring pin press and describes appropriate handling instructions for the tool. The engineering evaluation is required for operations and field use of special tools and equipment.

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PERFORMANCE AND FUNCTIONAL REQUIREMENTS/EVALUATION FOR SPECIAL TOOLS AND EQUIPMENT

RPP No. 43636 Rev. 0

Page 1 of 3

☒ Evaluation of Suitability for Intended Use (TFC-OPS-MAINT-C-01)	☐ New Procurement (TFC-ENG-DESIGN-C-34)
Work Package No.:	Purpose of Procurement:

SECTION 1 REQUEST

1.1 Brief Description (identify items – include form, fit and function as appropriate):

Several valve funnels are being removed for modification or replacement in valve pits AP-02A, AP-02D, AWA, AZ, and pump pit AZ-01A as described in ECN-726508 R0. These funnels are secured by spring pins (roll pins) that have been difficult to remove in the past. This device clamps on to the valve funnel and utilizes a threaded shaft to press the spring pin out of the valve funnel as it is turned. A strap has been added to the inside diameter of the clamp to aid in tool-to-funnel alignment, as pictured on pages 6 and 7 of the attached photos. Several 3/16" and 1/4" diameter pins, included with the tool, are driven by the large 9/16" screw and press the spring pin from the funnel. The included pins are different lengths to accommodate varying positions and lengths of spring pins found in the valve funnels. Utilization of this tool will minimize side loading of the valve stem and prevent potential damage from spring pin removal.

1.2. Was an Engineering evaluation previously performed and documented?

☐ Yes ☒ No ☐ Unknown

If YES, Document Number and Revision:

Is the existing evaluation adequate? ☐ Yes ☐ No ☒ N/A (explain below if necessary)

1.3 Requestor/Phone No./Date (optional)

K A Baird

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SECTION 2 FUNCTIONAL REQUIREMENTS

Identify Required Operations:

The device shall be capable of pressing 3/16" and 1/4" spring pins out of the valve funnels in valve pits AP-02A, AP-02D, AWA, AZ, and pump pit AZ-01A.

SECTION 3 PERFORMANCE REQUIREMENTS (Complete all that apply or denote as "N/A")

3.1 Prerequisite Conditions

Consider attributes such as temporary conditions, high pressure/temperature requirements, and noise restrictions.

There are no temporary conditions, pressure/ temperature requirements, or noise restrictions associated with this tools use.

3.2 Radiological Conditions

Consider attributes such as exposure to radiation and spread of contamination.

Any waste present inside valves or piping is isolated from the valve funnel and valve funnel spring pin, the spring pin removal press will not contact waste. In the event the tool were to become contaminated, the tool is made with smooth surfaces to ease decontamination. The total duration of tool use will be minimal; therefore, radiological exposure to the components is not a factor.

3.3 Chemical Conditions

Consider attributes such as vapors, fumes, and aerosol.

N/A

3.4 Electrical Conditions

Consider attributes such as electrical hazards, NEC and NRTL requirements and loading.

N/A

3.5 Weight/Loading Conditions

Consider attributes such as hoisting/rigging requirements and recommendations, structural integrity during use and applied loads, and vibration loading.

No hoisting or rigging required. The weight of the spring pin press assembly is less than 10 pounds.

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Page 2 of 3

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3.6 Environmental Conditions Consider attributes such as weather and flammable gas requirements/recommendations. N/A	
3.7 Material Requirements Consider attributes such as strength of materials, welding, and coating requirements. The tool is constructed of steel and this material is appropriate for the intended use.	
3.8 Interface Hardware and Equipment This tool is intended for use with a 3/8" drive ratchet.	
3.9 Lessons Learned from Past Issues and Applications N/A	
3.10 Testing Requirements Consider mock-up or qualification testing requirements as applicable. Shop test press on spare valve funnel before field use to verify the tool can remove a 1/4" spring pin from a valve funnel.	
3.11 Quality Assurance Requirements Consider attributes such as training, inspection, and other applicable quality program requirements. There are no QA requirements associated with this tool.	
SECTION 4 ATTACHMENTS (List)	
Tool Pictures Pages 4-11. NOTE: Pictures on pages 9-11 depict the tool during construction and are for dimensional reference only.	
SECTION 5 EVALUATION RESULTS/CONCLUSION (N/A for New Procurements)	
5.1. Item Acceptable for Use? ☒ Yes ☐ No	
5.2 Evaluation Description Valve pit and valve funnel drawings were reviewed to confirm the spring pin press was made to the correct dimensions. Additionally, the tool was physically inspected to ensure the tool was free from sharp edges that could potentially injure the operator or puncture gloves, all edges were found to be ground smooth and acceptable as built. The tool has been shop tested on a spare valve funnel and was found to remove a 1/4" spring pin easily as identified in the functional requirements. The following documents were referenced for this evaluation: ECN-726058 R0, ECN-726059 R0, ECN-726508 R0, H-14-104974 SH1 R3, and H-14-104982 SH1 R2.	
5.3 Limiting Conditions of Use This tool shall only be used for removing 3/16" and 1/4" spring pins from valve funnels in pits AP-02A, AP-02D, AWA, AZ, and pump pit AZ-01A.	
SECTION 6 APPROVALS	

PERFORMANCE AND FUNCTIONAL REQUIREMENTS/EVALUATION
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RPP No. 43636 Rev. 0

Page 3 of 3

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Responsible Engineer Josh Witherspoon	<u>12/30/09</u> Date
Engineering Manager Approval John Huber	<u>12/30/09</u> Date

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16

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