**CACIE Tool #16** – ***SIMV2 Appendix F Inventory Preprocessor (ca-ipp.pl)***

**Version** **1.0**

**QA**: **TEST** or **NA** or **QA**

1. **Description and Purpose**

One or two paragraphs describing the tool’s function and purpose.

The SIMV2 Appendix F Inventory Preprocessor tool ….???.

1. **Functional Requirements**
2. The functional requirements of the tool will be documented in this section. Each requirement will have an ID, such as: FR-N, where N starts at 1 and increments for each Functional Requirement. Each of the Functional Requirement IDs will have a corresponding test ID listed in the RTM.

FR-1: Open ehsit, rad inventory, chemical inventory (if applicable), liquid inventory, and solid waste release files

FR-2: Create Hash list of ehsit waste site names, documenting duplicate waste sites

FR-3: Load SIM Inventory

FR-4: Verify SIM Inventory rad units are in Ci and volume units are in m3

FR-5: Calculate total Uranium based on the uranium isotope activities in the SIM Inventory

FR-6: Load chemical inventory if applicable

FR-7: Load SAC water sources, documenting duplicate waste sites

FR-8: Calculate total Uranium based on the uranium isotope activities in the SAC Liquid Inventory

FR-9: Load solid waste release sites

FR-10: Cross-check SIMV2 sites with ehsit sites

FR-11: Cross-check SAC sites with ehsit sites

FR-12: Cross-check SAC sites with SIMV2 sites

FR-13: Cross-check solid waste release sites with ehsit sites

FR-14: Cross-check solid waste release sites with SIMV2 sites

FR-15: Process inventory (additional details pending…)

….

1. **Software Requirements Specifications**

The software requirements specification of the tool will be documented in this section.

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1. **Software Design Description**

The software design description of the tool will be documented in this section. The results of a Code Walkthrough with an independent third party will be summarized in this section.

Material lookup values stored in code:

Half-life: U-232, U-233, U-234, U-235, U-236, U-238  
Atomic mass: U-232, U-233, U-234, U-235, U-236, U-238  
Curie: 3.7E+10 atoms/sec

Calculated Specific Activity formula:

Specific Activity =

Calculated Total Uranium formula:

Total Uranium =

Arguments:  
eshit file name [ehsit]  
Appendix F SIMV2 rad inventory [radinv]  
Chemical inventory (if applicable) [cheminv]  
SAC liquid inventory [liqinv]  
Solid waste release directory for summary.csv file [ swrdir]  
Redistribution file name (optional) [redfn]  
New inventory file name prefix [outpref]  
  
Output files:  
file\_name\_prefix.log  
file\_name\_prefix.csv  
file\_name\_prefix-summary.csv

1. **Requirements Traceability Matrix**

A requirements traceability matrix for the tool will be documented in this section. At a minimum, the matrix will include IDs of: Functional Requirements and the corresponding Acceptance Test, along with an indication of the test result (Pass/Fail).

Table 1 presents the requirements traceability matrix for the SIMV2 Appendix F Inventory Preprocessor tool.

| **Table 1. SIMV2 Appendix F Inventory Preprocessor Tool Requirements Traceability Matrix** | | |
| --- | --- | --- |
| **Functional Requirement** | **Acceptance Test** | **Test Result (Pass/Fail)** |
| FR-1 |  |  |
| FR-2 |  |  |
| FR-3 |  |  |
| FR-4 |  |  |
| FR-5 |  |  |
| FR-6 |  |  |
| FR-7 |  |  |
| FR-8 |  |  |
| FR-9 |  |  |
| FR-10 |  |  |
| FR-11 |  |  |
| FR-12 |  |  |

1. **Test Plan and Cases**

The test plan for the tool will be documented in this section. Each test will have a unique ID and criteria for determining if the test result is pass or fail. The TEST ID will be referenced in the RTM and ATR. An installation test, labeled **IT-1**, will be used by the Tool Runner to confirm the version of the tool being used is running correctly before launching it with the user’s parameters.

The Unit Testing done on the tool will be documented here, also.

The test plan for the SIMV2 Appendix F Inventory Preprocessor tool is as follows.

| **Table 2. SIMV2 Appendix F Inventory Preprocessor Tool Test Plan** | | |
| --- | --- | --- |
| **TEST ID** | **Test Case** | **Test Result (Pass/Fail)** |
| IT-1 | Installation Test |  |
| ATC-X |  |  |
| ATC-X |  |  |

1. **Acceptance Test Report**

The test report will state whether the tool is qualified for use, summarize test case results, and report all resolved incidents and resolution of unresolved incidents.

1. **User Guide**

A guide for using the tool will be documented in this section.