**CACIE Tool #09.0** – ***ca-refnode (extract\_ref\_node\_ret.f)***

**Version** **1.0**

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

1. **Description and Purpose**

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

This tool reads the STOMP output file from the RET flow-only transient simulation and extracts a user-specified parameter for a user-specified reference node (i,j,k). Assumes STOMP output file is named output.

1. **Functional Requirements**

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: Read model name from command line

FR-2: Read reference node variable from command line

FR-3: Open outfile1 as “ModelName\_caret-wb\_output\_RefNodeVar.dat” with STATUS=REPLACE

FR-4: Open “input” with STATUS=OLD

FR-5: Read input

FR-6: Open “output” with STATUS=OLD

FR-7: Read output

FR-8: Write to outfile1

1. **Software Requirements Specifications**

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

FORTRAN

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.

ModelName

Reference Node

input

output

Outputs:

ModelName\_caret0wb\_output\_RefNodeVar.dat

.sh file: run\_extract\_caret-wb\_ref\_nodes.sh

* &> $1"\_ref\_node\_extract.log" ../../tools/ca-refnode/extract\_ref\_node\_ret.exe $1 saturation   
  &>> $1"\_ref\_node\_extract.log" ../../tools/ca-refnode/extract\_ref\_node\_ret.exe $1 pressure   
  &>> $1"\_ref\_node\_extract.log" ../../tools/ca-refnode/extract\_ref\_node\_ret.exe $1 znc
* # Command line variable 1 is model name. Used in file names.

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 Extract Ref Node Ret tool.

| **Table 1. Extract Ref Node Ret 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 |  |  |

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 Extract Ref Node Ret tool is as follows.

| **Table 2. Extract Ref Node Ret 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.