

Quarterly Report – Public Page

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Safety Administration

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Results and Conclusions:

The Task 1 Report was completed and submitted. Task 1 efforts focused on gathering published reports and journal articles related to UGS facilities, failures and accidents, failure modeling methods, and applications of SSSVs. About 38 relevant references were identified and collected including several reports with detailed descriptions of accidents and failure rates for UGS wells without SSSV used. However, information for failures of UGS wells with SSSV is very limited and not sufficient to calculate failure rates. This finding is consistent with several publications that point to the general unavailability of SSSV-specific data in open literature and the need collect this type of information (Interagency Task Force on Natural Gas Storage Safety, 2016; Long et al., 2018).

Several databases containing well data were identified and evaluated. Out of the databases evaluated, the WellMaster database may offer the necessary data to quantify the performance of SSSV in non-UGS deployments. The PHMSA Annual Report database contains information about application of SSSVs in UGS wells, but not enough information to quantify the performance of specific components. This database was useful for identification of operators who use SSSV in their UGS wells and guided the choice of operators to contact.

Battelle contacted 23 SMEs and seven of them responded positively and agreed to participate in this project. The INGAA (Christopher J. Osman, Director of Operations, Safety and Integrity) was helpful and facilitated contacts with several major UGS operators, leading to direct opportunities for sharing field data with this study.

The best likely source of relevant information appears to be a direct contact with UGS operators that use SSSV in their wells. Securing operator well data is challenging since companies often consider the information as internal and/or proprietary. Battelle established contacts with several major operators and explained the data needs of this

project. Types of required information, acceptable conditions on data transfer and benefits of the project to the UGS industry were discussed. The response of operators was positive and a general agreement to share data with Battelle was reached.

Information from UGS operators in addition to the WellMaster database will provide quantifiable data that will be evaluated in Task 2 to improve the definition of requirements and specifications for future SSSV deployments.

Plans for Future Activity:

Battelle plans to begin work on Task 2, using information from UGS operators in addition to the WellMaster database will provide quantifiable data that will be evaluated to improve the definition of requirements and specifications for future SSSV deployments.