Introduction

This symposium on the slow strain-rate technique (SSRT) for studying the stress corrosion behavior of metals was organized to assemble and make available the data, conclusions, experiences, and theories derived from the use of this test method. Use of the slow strain-rate technique has proliferated from use by only a few laboratories a decade ago to rather widespread use today by a large number of workers. Because of the rapid increase in use and interest in the SSRT, the need for a comprehensive treatment of the subject was recognized by the American Society for Testing and Materials (ASTM) and National Association of Corrosion Engineers (NACE) Committees concerned with stress corrosion cracking (SCC), Committees G-1 and T-3E, respectively.

The proceedings provide a convenient introduction for those unfamiliar with slow strain-rate tests for SCC and relevant information on the application of the technique for specific alloys of chemical environments. For those familiar with the technique a data base is also provided so that the results of slow strain-rate tests can be compared with results of other SCC tests, for example, constant load tests and constant strain tests. Based on the information presented, a greater appreciation can be gained for the strengths and limitations of the technique, and it can be used with the appropriate confidence or caution.

The symposium was organized to address from several vantage points the use of the slow strain-rate technique. A series of papers is concerned with the stress corrosion cracking process and the relationship of the slow strain-rate technique to relevant phenomena, for example, anodic dissolution, and passive film breakdown and repassivation. Interpretation of results is the primary topic of several papers. Other papers discuss the application of the SSRT to specific alloys or environments. In addition, several papers focus on equipment and procedures used in the test.

With the publication of the proceedings it is noted that the slow strain-rate technique can move more rapidly from the state of a "new" test method to

that of a widely accepted and understood tool for the study of SCC. At the present time both the ASTM and the International Standards Organization (ISO) Committees concerned with corrosion are working on a standard test method for use of SSRT in stress corrosion testing.

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