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Standard Guide for Record Keeping for Electrodialysis/Electrodialysis Reversal Systems[1]

This standard is issued under the fixed designation D5131; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide covers procedures for well defined record keeping for electrodialysis (ED) and electrodialysis reversal (EDR) systems.

1.2 This guide includes a start up report and record keeping for ED/EDR and pretreatment operating and maintenance data.

1.3 This guide is applicable to all waters but is not necessarily complete for waste waters.

1.4 This is a guide only and should not be construed as a complete delineation of all record keeping required for a specific application.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1125 Test Methods for Electrical Conductivity and Resistivity of Water

D1129 Terminology Relating to Water

D1253 Test Method for Residual Chlorine in Water

D4189 Test Method for Silt Density Index (SDI) of Water (Withdrawn 2023)[3]

D5091 Guide for Water Analysis for Electrodialysis/Electrodialysis Reversal Applications (Withdrawn 2023)[3]

D7726 Guide for The Use of Various Turbidimeter Technologies for Measurement of Turbidity in Water

3. Terminology

3.1 *Definitions*—For definitions of terms used in this guide refer to Terminology D1129.

4. Significance and Use

4.1 Proper operation and maintenance of an ED/EDR system and any associated pretreatment system are key factors in obtaining optimum performance. This guide provides the necessary input data for the evaluation of the performance of the ED/EDR system, the pretreatment system, and the mechanical equipment in the plant.

4.2 This guide is for general guidance only and must not be used in place of the operating manuals and manufacturer's recommendations for specific equipment or a specific application.

4.3 Site dependent, equipment design and regulatory requirement factors prevent specific recommendations for all record keeping. Thus, only general record keeping relating to operation and maintenance is covered by this guide.

5. Procedure

5.1 *Start Up Report:*

5.1.1 Provide a complete description of the water source, pretreatment system, ED/EDR plant, and post treatment equipment. This can be done by using the system flow diagram and equipment material and instrumentation lists.

5.1.2 Provide a listing of all specific chemicals used with their design dosage rates.

5.1.3 Provide a listing of all design parameters for pressures, flows, water analysis for raw water and ED/EDR

[1] This guide is under the jurisdiction of ASTM Committee D19 on Water and is the direct responsibility of Subcommittee D19.08 on Membranes and Ion Exchange Materials.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] The last approved version of this historical standard is referenced on www.astm.org.