

DIN EN ISO 14414:2015-12 (E)

Pump system energy assessment (ISO/ASME 14414:2015)

Contents		Page
Foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	7
4	Identification of the assessment team, authority and functions	7
4.1	Identification of assessment team functions	7
4.2	Assessment team structure, leadership and competency	8
4.3	Facility management support	8
4.4	Communications	8
4.5	Access to facilities, personnel and information	8
4.6	Assessment objectives, scope and boundaries	9
4.7	Action plan	9
4.7.1	General	9
4.7.2	Assessment scheduling	10
4.8	Initial Data Collection and Evaluation	10
4.8.1	General	10
4.8.2	Initial facility specialist interviews	10
4.8.3	Energy project history	10
4.8.4	Energy cost	10
4.8.5	Initial system data	11
4.9	Objective check	11
5	Conducting the Assessment	11
5.1	Assessment Levels	11
5.1.1	General	11
5.1.2	Level 1 assessments	12
5.1.3	Level 2 assessments	13
5.1.4	Level 3 Assessments	13
5.2	Walk Through	14
5.3	Understanding system functional requirements	15
5.4	Determining system boundaries and system energy demand	15
5.5	Information needed to assess the efficiency of a pumping system	15
5.5.1	General	15
5.5.2	Electrical motor/drive information	15
5.5.3	Pump information	16
5.5.4	Liquid properties information	17
5.5.5	Detailed system data	17
5.5.6	Measured data	18
5.6	Data collection	18
5.6.1	System information	18
5.6.2	Measurement of pump and motor operating data	19
5.6.3	Pressure	19
5.6.4	Flow	19
5.6.5	Input power	19
5.7	Cross validation	20
5.8	Wrap-up meeting and presentation of initial findings and recommendations	20

6	Reporting and documentation	20
6.1	Final assessment report	20
6.2	Data for third party review	20
6.3	Review of final report by assessment team members	21
Annex A (normative) Report		22
Annex B (informative) Recommendations on efficient system operation and energy reduction - Examples		26
Annex C (informative) Expertise, experience and competencies		44
Annex D (informative) Recommended guidelines for analysis software		47
Annex E (informative) Example of prescreening worksheet		49
Annex F (informative) Specific Energy		50
Annex G (informative) Pumping system parasitic power		54
Annex H (informative) Example of pumping system efficiency indicator		57
Bibliography		60