Agency Decision

In response to the President's Regulatory Reinvention Initiative, NHTSA carefully examined Standard No. 125. Although NHTSA has a safety standard for warning triangles, FHWA is the part of the Department that has the greatest program responsibilities for warning triangles. It is FHWA that requires vehicle operators to carry warning triangles or other warning devices in vehicles and it is FHWA that requires vehicle operators to use warning triangles or other warning devices to alert other motorists of the presence of a disabled vehicle. In issuing its proposal, NHTSA believed it would make the government program for warning triangles more effective and more efficient if the FHWA were also responsible for establishing the performance requirements for these warning devices.

After reviewing the public comments on this proposal and after further consultation with FHWA, NHTSA believes that the current division of program responsibilities and regulatory requirements has served the public well. In fact, the current division of responsibilities assures the public the benefits of the joint expertise of NHTSA and FHWA working together on issues that arise in connection with these warning devices. In addition, the proposal would have forced FHWA to expend resources to promulgate a rule that would be identical to the rule NHTSA rescinded. After reconsidering all these factors, NHTSA has concluded that its proposal to rescind the warning triangle standard should be terminated. This notice announces that termination.

Potential rulemaking actions may arise from one or more pending petitions. Because it will retain Standard No. 125, NHTSA will proceed with its consideration of pending petitions for rulemaking to amend Standard No. 125 from the TSEI and Gault Industries.

Authority: 49 U.S.C. 322, 30111, 30115, 30117, and 30166; delegations of authority at 49 CFR 1.50 and 501.8.

Issued on: June 10, 1997.

L. Robert Shelton,

Associate Administrator for Safety Performance Standards.

[FR Doc. 97–15746 Filed 6–13–97; 8:45 am]

BILLING CODE 4910–59–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 679

[Docket No. 960206024–7123–02; I.D. 043097A]

RIN 0648–AG32

Fisheries of the Exclusive Economic Zone Off Alaska; At-Sea Scale Certification Program

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: NMFS proposes amendments to the regulations implementing the Fishery Management Plan for Groundfish of the Gulf of Alaska and the Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Islands Area (FMPs). This proposed regulatory amendment would implement the requirements for certification and at-sea testing of scales used to weigh groundfish catch at sea. This action is intended to promote the objectives of the FMPs.

DATES: Comments must be received by July 16, 1997.

ADDRESSES: Comments on the proposed rule should be sent to Ronald J. Berg, Chief, Fisheries Management Division, Alaska Region, NMFS, P.O. Box 21668, Juneau, AK 99802, Attn: Lori J. Gravel, or delivered to the Federal Building, 709 West 9th Street, Juneau, AK.

Send comments regarding burden estimates or any other aspect of the data requirements, including suggestions for reducing the burdens, to NMFS and to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Washington, D.C. 20503, Attn: NOAA Desk Officer.

FOR FURTHER INFORMATION CONTACT: Sally Bibb, 907–586–7228.

SUPPLEMENTARY INFORMATION:

Background

Fishing for groundfish by U.S. vessels in the exclusive economic zone of the Gulf of Alaska (GOA) and the Bering Sea and Aleutian Islands Management Area (BSAI) is managed by NMFS according to the FMPs. The FMPs were prepared by the North Pacific Fishery Management Council (Council) under authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Fishing by U.S. vessels is governed by regulations implementing the FMPs at subpart H of 50 CFR part 600 and 50 CFR part 679.

In 1990 the Council requested that NMFS analyze a requirement to weigh catch processed at sea. NMFS implemented regulations on May 16, 1994 (59 FR 25346), requiring processor vessels in the pollock Community Development Quota (CDQ) fisheries to either provide certified bins for volumetric estimates of catch or scales to weigh catch. In September 1994, the Council recommended that NMFS require processor vessels participating in the BSAI pollock fisheries to weigh their catch before discard or processing. In response to this request, NMFS published an Advance Notice of Proposed Rulemaking (ANPR), which requested public comment on a three-part scale evaluation and approval process on February 20, 1996 (61 FR 6337). Public comment was invited through March 21, 1996. Comments relevant to this proposed rulemaking are summarized and responded to below in the ''Response to Comments'' section.

The proposed at-sea scale certification program described in this rulemaking is designed in response to comments on the ANPR, NMFS research evaluating the use of scales on processor vessels, further experience using scales on two processor vessels in the CDQ fisheries, and the recommendations of a technical advisor hired by NMFS.

NMFS specifically seeks public comment on the proposed process for determining whether a particular scale is capable of weighing accurately at sea, the performance and technical requirements in the At-Sea Scales Handbook, and the proposed procedures for testing scales at sea.

Specifying Which Processors Must Weigh

This proposed rulemaking does not require specific processors or vessels to use certified scales to weigh catch at sea. NMFS currently is considering proposing requirements for at-sea weighing in the proposed multispecies CDQ fisheries and in the BSAI pollock fisheries as recommended by the Council. However, a program for inspecting and certifying scales for use in weighing at sea must be established before NMFS proceeds with proposed requirements for specific processors or vessels to weigh catch at sea.

Response to Comments

Six letters were received in response to the request for public comment on the ANPR. Many of the comments in these letters related to whether NMFS should require processor vessels in the BSAI pollock fisheries to weigh catch at

sea. Eight comments related to specific questions in the ANPR about the technical or operational aspects of a certified scale program, which is the subject of this proposed rulemaking. These comments are addressed below.

Comment 1. Any method of evaluating a scale must first establish specifications in detail.

Response. NMFS concurs. NMFS hired a technical advisor with expertise in developing specifications for many different types of scales to revise the specifications originally proposed in the ANPR. NMFS believes that the level of detail and the applicability of performance and technical requirements for scales used to weigh catch at sea have been improved in the proposed rule and the At-Sea Scales Handbook. NMFS continues to seek public comment in this regard.

Comment 2. Personnel with the National Type Evaluation Program (NTEP) do not have the expertise to evaluate at-sea scales.

Response. NMFS concurs that NTEP personnel have not evaluated a scale designed to compensate for vessel motion, although appropriate expertise and test procedures could be developed at accredited laboratories in the future. Unlike the ANPR, the proposed rule would allow laboratory tests to be conducted at any accredited laboratory.

Comment 3. It is not feasible to use groundfish as a test material for the initial inspection of motion-compensated belt scales on vessels because it would require travel to Alaska well in advance of the fishing seasons to harvest a small amount of fish for the tests.

Response. NMFS concurs. The proposed rule would allow initial and periodic scale inspections to be conducted at any time during the year in either Seattle or Dutch Harbor. Because fish would not be available at the time of initial inspection, the proposed rule would allow the use of alternative material. However, fish could still be used in daily materials tests conducted during the fishing seasons.

Comment 4. The fishing industry is unwilling to fund the inspection and certification program for scales used to weigh catch in the open access fisheries.

Response. The proposed rule does not include a provision that would require the fishing industry to pay for scale inspections and certifications, although provisions to recover the costs of the scale inspections could be added by NMFS in the future if the collection of fees for this service were authorized by the Magnuson-Stevens Act. NMFS would not pay for laboratory tests conducted under type approval requirements. These tests would be the responsibility of the scale manufacturer.

Comment 5. Knowledgeable inspectors must be available to conduct scale tests.

Response. NMFS concurs and intends to designate an agency such as the State of Alaska, Division of Measurement Standards, to provide trained personnel to inspect and certify at-sea scales. Weights and measures inspectors would require little additional training to inspect hopper scales, platform scales, and hanging scales as they regularly certify these types of scales for use on land. The inspectors are less familiar with belt scales. However, the specific requirements listed in the At-Sea Scales Handbook combined with written procedures for conducting the inspections would assist the inspectors. In addition, training on inspecting and certifying belt scales would be provided.

Comment 6. Results of initial experience with motion-compensating scales are not good.

Response. NMFS has had experience with scales used to weigh catch on three processor vessels. In one case, the processor vessel installed the scale voluntarily and used it to monitor product recovery rates. This processor has reported no problems with the scale in over 5 years of use. The other two processor vessels installed scales during the 1995 pollock nonroe season in order to comply with regulations governing the pollock CDQ program. One of these scales was improperly installed. An initial inspection of the scale as described in this proposed rule would have identified the installation problem before the vessel went fishing. The other scale was modified during the fishing season in a manner that prevented it from weighing accurately. Education of the vessel crew as to how the scale operates appears to have resolved this problem.

Since the ANPR was published, NMFS has contracted with a processor vessel to use a motion-compensated belt scale to evaluate the accuracy of various methods for making volumetric estimates of catch weight in the pollock fisheries. The belt scale was tested nearly every day for approximately 14 weeks and weighed the test material within 3 percent of its known weight each time it was tested.

Comment 7. Daily tests of the scale would be costly to industry in terms of the lost production time.

Response. Based on experience testing the scale, NMFS estimates that the time required for daily scale tests would be 15 minutes or less. NMFS believes testing the scales each day is necessary to determine whether they are continuing to weigh accurately at sea.

Comment 8. Only one scale company manufactures a scale reliable enough to accurately weigh catch at sea. This will result in high costs for the scale and scale repair and a shortage of qualified technicians.

Response. NMFS agrees that, thus far, only one company has demonstrated that its scale can weigh large quantities of fish at sea and pass daily accuracy tests. However, several scale companies are developing at-sea scales of various types including belt scales and automatic hopper scales. Implementation of specific performance and technical requirements is expected to provide the information necessary for other scale companies to develop competing products.

At-Sea Scale Certification Program

Scales used in commerce in the United States are regulated by state and local government agencies, based on national standards established by the National Conference on Weights and Measures (NCWM) and published by the U.S. Department of Commerce, National Institute for Standards and Technology (NIST) in Handbook 44. Handbook 44 includes design, use, and performance standards for many different weighing and measuring devices, including several different types of scales. Scales used by processors buying fish in Alaska are required to be certified by the State of Alaska, Division of Measurement Standards, based on Alaska regulations and Handbook 44.

Although Handbook 44 contains standards for scales of the general description of those that will be used to weigh catch at sea (i.e., belt, hopper, platform, and hanging scales), it does not provide adequate standards for at-sea scales for several reasons. First, it contains no requirement for motion compensation technology, which NMFS believes is necessary to weigh accurately at sea. Second, it contains no standards appropriate to evaluate the type of belt scale that has been designed for use on processor vessels. NMFS believes this type of scale should be an option for vessel owners. Finally, accuracy standards or tolerances for scales used in commerce are higher than NMFS believes can be achieved at sea.

The lack of appropriate standards for at-sea scales led NMFS to develop the proposed standards for at-sea scale certification in the At-Sea Scales Handbook. This handbook was prepared by NMFS with the assistance of a technical advisor who was formerly employed with NIST. The proposed standards are modeled after

requirements in Handbook 44 and other international scale standards but have been modified to reflect the unique environment in which at-sea weighing will occur.

The proposed rule would add a new § 679.28 to 50 CFR part 679, titled ''Equipment and Operational Requirements for Catch Weight Measurement'' and would codify the At-Sea Scales Handbook as Appendix A to part 679. Section 679.28 would contain vessel owner and operator responsibilities for scale certification, at-sea testing, and recordkeeping and reporting and would define a scale certified to weigh at sea as one that meets the performance and technical requirements in Appendix A to part 679, the At-Sea Scales Handbook.

Compliance with the performance and technical requirements in the At-Sea Scales Handbook would be evaluated through both laboratory tests and scale inspections. First, the model of scale would be tested in a laboratory to verify that it meets technical requirements and weighs accurately under some of the environmental factors expected on commercial fishing and processing vessels. This process is know as ''type evaluation''.

Second, each installed scale would be certified by an inspector authorized by the Administrator, Alaska Region, NMFS (Regional Administrator) in initial and periodic inspections. A certified scale would be required to be recertified each year. In addition, the scale would have to be recertified if it is modified or removed from the vessel and reinstalled. Further, to being certified, the scale would be required to weigh accurately at sea as determined by tests performed each day by the vessel crew and witnessed by the NMFS-certified observer.

Compliance with § 679.28 would require successful completion of all three elements described above. The scale would be required to successfully meet both the type evaluation and inspection requirements to be certified. Once certified, the scale would be required to continue to weigh accurately at sea. A certified scale that did not pass daily scale performance tests would not comply with the regulations and an uncertified scale could not be used even if it passed daily scale tests.

NMFS believes that the three-part scale testing and inspection process is necessary to prevent the installation and use of equipment that is not suited for the environment in which it will be used and to minimize the number of scales that develop problems during a fishery. The type-evaluation process would evaluate how a scale performs under laboratory simulation of the at-sea environment—tests that cannot be performed by a scale inspector on the vessel. Type evaluation also would provide the vessel owners added assurance that the model of scale they are purchasing has been designed to perform on a vessel and that it meets some of the minimum technical and performance requirements for at-sea scales. The initial and periodic inspections would verify that each scale installed on a particular vessel complies with all technical requirements and weighs test material or test weights accurately. The inspection also would identify improper installations or malfunctioning scales and verify that the vessel owner has provided the test material required for the at-sea scale tests. The at-sea scales tests would be the only tests that would determine whether the scale weighs accurately at sea. NMFS is not proposing to require laboratory simulation of vessel motion due to the complexity and cost of this type of testing. The scale inspections would occur at the dock, under conditions of minimal vessel motion.

The At-Sea Scales Handbook contains requirements for four different types of scales that may be used to weigh fish on a vessel. They are (1) belt scales, (2) automatic hopper scales, (3) platform scales, and (4) hanging scales. The handbook has a separate section for belt scales and automatic hopper scales. The requirements for platform and hanging scales are combined in a third section. Type evaluation requirements for all scales are included in an annex to Appendix A.

Only these four types of scales could be certified under the proposed program. No other type of weighing or measuring device could be certified under this program until certification standards are developed and added to § 679.28 and Appendix A.

Performance standards and technical requirements for four different types of scales are necessary because of the many possible applications for at-sea scales. Belt scales are most appropriate for high volume, continuous flow operations such as trawl catcher/processors or motherships. However, these scales may not weigh as accurately in low volume or discontinuous flow operations such as on longline or pot catcher/processors. Automatic hopper scales could be used for both types of operations because they accumulate fish in a hopper until a certain target weight is reached, then fish are released back onto the factory line. Platform and hanging scales are included because they could be used to weigh fish in small quantities.

Type Evaluation

Type evaluation is a one-time test of a model or type of scale to determine whether the scale meets technical requirements and functions within specified parameters under the environmental conditions expected on a vessel. In order to obtain type approval, a scale company would submit one scale of a particular model or type for laboratory tests. If that scale met the performance and technical requirements, the laboratory certification would cover all scales of this particular model. The proposed regulations would not require laboratory testing of each individual scale.

One of the most important technical requirements that would be verified by the laboratory would be whether the scale was designed to compensate adequately for the effect of motion on the weight indicated by the scale. NMFS proposes to require that scales be equipped with automatic means to compensate for the motion of a vessel at-sea in the form of a reference load cell and a reference mass weight or other equally effective means. The reference mass weight would be weighed by the reference load cell and a motion-compensation adjustment factor would be calculated and applied to the fish weight. For example, assume that the reference mass weight actually weighed 10 kg, but the motion of the vessel was such that the reference load cell sensed that it weighed only 9.9 kg. In this case, the scale would adjust the weight of the fish it was weighing by the same ratio as the indicated error in the reference weight (see sections 2.3.2.6, 3.3.4.3, and 4.3.2.3 in the At-Sea Scales Handbook). Scale manufacturers who wish to use a different but at least as effective means of motion-compensation as described above would be required to provide NMFS with laboratory or field test results demonstrating that the scale is capable of weighing accurately at sea.

One scale manufacturer has submitted laboratory test results to NMFS for a motion-compensated belt-conveyor scale. The tests were performed at a Danish laboratory and would comply with many of the requirements proposed in this rulemaking. Other types of motion-compensated scales would have to be submitted to a laboratory for evaluation, which could take up to 3 months to complete. Certification of successful completion of laboratory tests would be required before the an inspector could test and certify a scale installed on a vessel.

Requirements for the laboratory tests are contained in two different areas of the handbook. Requirements specific to

a particular type of scale are found in sections 2, 3, and 4. Test procedures common to all scales are found in the annex to the handbook. For example, section 2 contains specific requirements for belt scales. Section 2.2 contains performance standards for belt scales. Section 2.2.1 contains the maximum permissible errors (mpe) for tests of the belt scale and section 2.2.1.1 contains the mpes for the laboratory tests of the belt scale. Similarly, section 3.2.1.1 contains the mpes for the laboratory tests of automatic hopper scales and section 4.2.1.1 contains the mpes for laboratory tests for platform and hanging scales.

The laboratory tests, described in the annex, are divided into disturbance tests and influence quantity tests. Disturbances refer to events that may occur while the scale is being used, but that are not within the rated operating conditions of the scale, such as short time power reduction, power bursts, electrostatic discharge, and electromagnetic susceptibility. Influence quantities refer to factors that may affect the accuracy of the scale weight and are within the rated operating conditions of the scale, such as temperature, humidity, and power voltage fluctuations.

Each scale submitted for type evaluation would be tested for disturbances and influence quantities based on the performance requirements of applicable sections of the handbook and on the test procedures in the annex. The scales also would be evaluated for compliance with the technical requirements in each section, such as scale markings, printed output, display units and capacity, permanence of marking, event loggers to record scale adjustments, and means to retain information in memory in the event of a power loss.

Complete, signed type-evaluation certification documents would be required to be received by the Regional Administrator before any scale of the particular model could undergo an initial inspection by the authorized inspector. The Regional Administrator would maintain a list of scales that had successfully completed type-evaluation requirements and make this list available to the public upon request. The type-evaluation certification documents would include an application form, checklists to verify compliance with all performance and technical requirements, and test report forms to record the results of specific tests. NMFS would provide the blank forms to scale manufacturers, laboratories, and vessel owners upon request.

Laboratories certifying compliance with type-evaluation requirements would have to be accredited by the U.S. Government or by the government of the country in which the laboratory is located. For example, in the United States, a laboratory may be accredited by programs recognized by the NIST such as the National Voluntary Laboratory Accreditation Program. Information about laboratory accreditation must be provided on the type evaluation certification documents and would be evaluated by the Regional Administrator through consultation with NIST or the national weights and measures agency of the country in which the laboratory is located.

The performance and technical requirements for laboratory tests for belt scales specified in the At-Sea Scales Handbook are based, in part, on the International Organization of Legal Metrology's (OIML) international recommendations for continuous totalizing automatic weighing instruments (R–50). Manufacturers of belt scales may request that the Regional Administrator accept laboratory tests performed to demonstrate compliance with OIML R–50 standards in lieu of laboratory tests in the At-Sea Scales Handbook. These manufacturers would have to submit written and signed copies of the laboratory test results. Any requirements in the At-Sea Scales Handbook that are not in the OIML R–50 standards would be required to be verified by an independent laboratory. NMFS would have these requests reviewed by a technical advisor to verify that the proposed laboratory test results met the requirements of the At-Sea Scales Handbook.

NMFS seeks public comment on whether existing laboratory certification processes in the United States or elsewhere could similarly be used in lieu of the proposed type evaluation certification requirements for automatic hopper scales, platform scales, or hanging scales. Comments must specifically address the source of the alternative laboratory test specifications and the type of certification documents that could be accepted by NMFS.

Initial and Periodic Inspections

The initial inspection of each scale installed on a vessel would be performed by an authorized weights and measures inspector designated by the Regional Administrator based on the performance and technical requirements in the At-Sea Scales Handbook. The inspector would complete certification forms including a checklist and test report forms. The vessel owner would be required to maintain a copy of the scale certification documents on the vessel at all times when a certified at-sea scale was required to be used and to submit a copy to NMFS. NMFS would maintain a list of vessels with current scale certifications.

The initial inspection would occur while the vessel is in drydock or tied up in either Seattle or Dutch Harbor. The vessel owner would be responsible to schedule inspections with the authorized weights and measures inspectors designated by the Regional Administrator. The vessel owner would be required to give the scale inspectors at least 10 working day's notice prior to the inspection to allow for scheduling and travel from anchorage to Seattle or Dutch Harbor. At the time of the inspection, the vessel owner would be required to assist the inspector in moving test equipment to and from the inspector's vehicle and the location on the vessel where the scale is installed.

Each scale would be inspected to determine compliance with technical requirements such as level installation; proper marking of information such as name, model designation, and serial number; the required indicators and printer; and the proper sealing of adjustable components. A ''zero test'' would be performed on all scales to determine whether the scale accumulated weight while empty.

Each scale would be tested for accuracy based on the procedures appropriate for the particular type of scale. Belt scales would be tested with a ''materials test'' in which an amount of material would be first weighed on a certified scale to determine its known weight and then weighed on the belt scale. The difference between the known weight and the weight indicated by the belt scale would be the error of the belt scale. Belt scales would be required to weigh material to within 1 percent of its known weight in the initial and periodic inspections in stationary installations.

Automatic hopper scales, platform scales, and hanging scales would be tested by placing standard test weights in or on the scale in different amounts and locations. These scales would be required to weigh the standard test weights to within 1 percent of their known weight. All test material and weights needed for scales tests during the inspection would be provided by the scale inspector.

Each scale would be tested to determine compliance with requirements for printed output. Printed output of the catch weight including vessel name and Federal fisheries or processor permit number, haul or set number, date and time weighing catch

from haul or set started and ended, and the weight of fish in each haul or set would be required for all scales. In addition, a printed record of any tests, adjustments, calibrations, or other procedures performed on the scale including month, day, year, and time of procedure, name or description of procedure, and result of procedure would be required. The inspector also would verify that the test material required to be provided by the vessel owner for the at-sea scale tests was on board the vessel and in compliance with requirements discussed below.

Each scale would be required to be certified every year, within 12 months of the date of the most recent certification. An inspection also would be required if the scale is moved to a different location on the vessel, undergoes major modifications, or is reinstalled after being removed from the vessel.

At-Sea Scale Tests

At-sea scale tests would be required to determine whether the scale weighed accurately in motion. Tests would be performed each day by the vessel crew and witnessed by the observer. Each scale would be required to weigh the test material within 3 percent of its known weight. If the scale did not meet this performance standard, it would be required to be recalibrated or repaired and retested. Any material or test weights required for the at-sea tests would be provided and maintained by the vessel owner. Test material other than fish or any standard test weights that will be used to test the scale at sea must be inspected and approved by the authorized weights and measures inspector at the time of initial or periodic inspections.

The vessel operator may conduct the scale test at any time that does not interfere with the observer's sampling or related duties, however, the observer must be notified of a test at least 15 minutes before it is conducted and the observer must be present for the test. The observer would not be required to determine the time of the test or to perform any of the physical labor associated with the test.

Classification

The Assistant General Counsel for Legislation and Regulation of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration that this proposed rule, if adopted, would not have a significant economic impact on a substantial number of small entities, as follows:

The proposed rule would establish a testing and certification program for scales to weigh catch at sea in the groundfish fisheries off Alaska. It does not include any requirements for specific vessels or processors to install or use at-sea scales.

Because there are no requirements imposed on vessel operators or processors, it does not affect the way they do business. There are no compliance costs, and there will be no impact on revenues. It merely establishes a procedure to be used in the future, if such requirements are imposed on vessels and/or processors. Therefore, no Initial Regulatory Flexibility Analysis was prepared.

This proposed rule has been determined to be not significant for purposes of E.O. 12866.

This proposed rule contains a new collection-of-information requirement subject to review and approval by OMB under the Paperwork Reduction Act (PRA). This collection-of-information requirement has been submitted to OMB for approval. The new information requirements include the following: (1) Scale manufacturers must submit completed At-Sea Scales Type Evaluation Certification documents to the Regional Administrator prior to being placed on the list of eligible at-sea scales; (2) vessel owners must submit a copy of the scale certification document issued by a scale inspector approved by the Regional Administrator to NMFS prior to participating in a fishery in which a certified at-sea scale is required; (3) vessel operators must maintain a record of the results of daily at-sea scale tests; and (4) vessel operators must maintain printed output from the scale. The public reporting burden for this collection of information is estimated to average 176 hours per response for the type evaluation certification documents, 15 minutes per response to submit the scale certification to NMFS, 45 minutes per response for the at-sea scale tests, and 3 minutes per response for the printed output from the scale. These estimates include the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding these burden estimates or any other aspect of the data requirements including suggestions for reducing the burden, to NMFS (see **ADDRESSES**) and to the Office of Information and Regulatory Affairs, OMB, Washington, DC 20503 (Attention: NOAA Desk Officer).

Public comment is sought regarding: Whether this proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information has practical utility; the accuracy of the burden estimate; ways to enhance the quality, utility, and clarity of the information to be collected; and ways to minimize the burden of the collection of information, including through the use of automated collection techniques or other forms of information technology.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection-of-information subject to the requirements of the PRA, unless that collection-of-information displays a currently valid OMB control number.

The Regional Administrator determined that fishing activities conducted under this rule will not affect endangered and threatened species listed or critical habitat designated pursuant to the Endangered Species Act in any manner not considered in prior consultations on the groundfish fisheries of the GOA or BSAI.

List of Subjects in 50 CFR Part 679

Fisheries, Reporting and recordkeeping requirements.

Dated: June 10, 1997.

David L. Evans,

Deputy Assistant Administrator for Fisheries, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 679 is proposed to be amended as follows:

PART 679—FISHERIES OF THE EXCLUSIVE ECONOMIC ZONE OFF ALASKA

1. The authority citation for part 679 continues to read as follows:

Authority: 16 U.S.C. 773 *et seq.*, 1801 *et seq.*, and 3631 *et seq.*

§ 679.27 [Reserved]

2. In subpart B, § 679.27 is reserved.

3. In subpart B, § 679.28 is added to read as follows:

§ 679.28 Equipment and operational requirements for catch weight measurement.

(a) *Applicability.* This section contains the requirements for motion-compensated, NMFS-certified scales to weigh catch at sea. This section applies only to vessels required to use at-sea scales elsewhere in the regulations.

(b) *At-sea scales certification program*—(1) *List of eligible at-sea scales.* The model of scale must be on the Regional Administrator's list of eligible at-sea scales before an inspector will test or certify a scale installed on a vessel under paragraph (b)(2) of this section. A scale will be included on the list of eligible at-sea scales when the

Regional Administrator receives the information specified in paragraph (b)(1) (i) or (ii) of this section from a testing laboratory accredited by the government of the country in which the tests are conducted. Each model of scale on the list of eligible at-sea scales will be assigned a NMFS type evaluation certification number by the Regional Administrator.

(*i*) *Type evaluation certification documents.* The following information must be submitted on forms provided by the Regional Administrator.

(A) *Type Evaluation Certificate*—(1) *Information about the scale. (i*) Name of scale manufacturer.

(*ii*) Name of manufacturer's representative.

(*iii*) Mailing address of scale manufacturer and manufacturer's representative.

(*iv*) Telephone and facsimile number of manufacturer's representative.

(*v*) Model of scale.

(*vi*) Serial number of scale being tested.

(*vii*) Type of scale, choosing among belt, automatic hopper, platform or hanging scale.

(*2*) *Information about the certifying laboratory. (i*) Name of laboratory. (*ii*) Mailing address of laboratory. (*iii*) Telephone and facsimile number of laboratory's representative. (*iv*) Name and address of government agency accrediting the laboratory. (*v*) Name and signature of person responsible for type evaluation certification and date of signature.

(B) *Type Evaluation Checklist.* The certifying laboratory's representative must indicate on the Type Evaluation Checklist form whether the scale met applicable performance and technical requirements specified in Appendix A (At-Sea Scales Handbook).

(C) *Type Evaluation Test Report Forms.* The certifying laboratory's representative must provide the results of each applicable test specified in Appendix A (At-Sea Scales Handbook) on the Type Evaluation Test Report Form.

(ii) *Alternative type evaluation certification documents.* Scale manufacturers may request that the Regional Administrator consider tests performed on belt scales to meet the International Organization of Legal Metrology's recommendations for continuous totalizing automatic weighing instruments (OIML R–50) in accuracy class 2 as a substitute for the requirements specified in Appendix A (At-Sea Scales Handbook). The Regional Administrator will review these proposals to determine whether the proposed test procedures and results comply with the requirements in paragraph (b)(1) of this section.

(2) *At-sea scale inspection certificate.* Each scale or scale system used to weigh catch at sea must be tested and certified by a scale inspector authorized by the Regional Administrator upon initial installation. The scale must be recertified each year within 12 months of the date of the most recent certification. The scale also must be certified after major modification or installation of the scale at a different location on the vessel. An at-sea scale inspection certificate will be issued by the inspector if the scale meets all applicable requirements specified in Appendix A (At-Sea Scales Handbook). In order to obtain an at-sea scale inspection certification, the vessel owner must:

(i) Make the vessel and scale available for inspection by a scale inspector authorized by the Regional Administrator after the vessel owner has installed a model of scale on the Regional Administrator's list of eligible at-sea scales described in paragraph (b)(1) of this section. The time and place of the inspection may be arranged by contacting the authorized scale inspectors. Scale inspections will be scheduled no later than 10 working days after the day that the vessel owner requests an inspection. Identity of authorized scale inspectors can be obtained from NMFS.

(ii) Transport test weights, test material, and equipment required to perform the test to and from the inspector's vehicle and the location on the vessel where the scale is installed.

(iii) Apply test weights to the scale or convey test materials across the scale, as requested by the scale inspector.

(iv) Assist the scale inspector in performing the scale inspection and testing.

(v) Submit a copy of scale certification documents signed by the weights and measures inspector to the Regional Administrator and maintain a copy of these documents on board the vessel at all times when the processor or vessel is required to use a certified scale. These documents must be made available to the observer, NMFS personnel, or an authorized officer upon request.

(vi) Make test material or test weights required for the at-sea scale tests under paragraph (b)(3)(ii) of this section available to the inspector at the time of the inspection.

(3) *At-sea scale tests.* Each scale or scale system used to weigh catch at sea must be tested each 24-hour period in which fish are weighed on the scale to verify that the scale is weighing test material within 3 percent of its known weight. The vessel operator must:

(i) Notify the observer at least 15 minutes before the test will be conducted and conduct the test while the observer is present.

(ii) Provide and maintain the following equipment or materials to conduct the test on board the vessel at all times while a daily test is required.

(A) *Belt scales.* The vessel operator must provide one of the following to conduct a daily materials test.

(*1*) At least 400 kg of fish whose weight has been determined to the nearest kg on a scale other than the scale under test. The scale used to determine the known weight of the fish must weigh test weights to within 1 percent of their known weight, or

(*2*) At least 400 kg of test material whose weight has been determined to the nearest kg on a scale certified under this section or certified by a state or local weights and measures official. The test material must be described in writing. If the test material is comprised of more than one package or unit of test material, each unit must have a unique identification number or letter, and weight of the unit indelibly marked on the exterior of the unit. The identification number and weight of each unit of test material must be certified in writing by the authorized scale inspector at the time of initial or periodic inspection. Replacement units of test material manufactured on board the vessel must be marked and weighed on a scale that meets the requirements of paragraph (b)(3)(ii)(A)(*1*) of this section. The NMFS-certified observer must witness the weighing of the replacement test material. Written information including the date the replacement material was weighed, the identification number and weight of the replacement material, and the identification number and weight of test material being replaced must be signed by the vessel operator and maintained with the original scale certification documents on the vessel.

(B) *Other Types of Scales.* The vessel operator must provide certified test weights in an amount equal to the largest amount of fish that will be weighed on the scale in one weighment. Each test weight must have its weight stamped on or otherwise permanently affixed to it. The weight of each test weight must be verified annually at the initial or periodic scale inspection required under paragraph (b)(2) of this section by the authorized weights and measures inspector.

(iii) Conduct the scale test by placing the test material or test weights on or across the scale and recording the

following information on the at-sea scale test report form.

(A) Vessel name.

(B) Month, day, and year of test.

(C) Time test started to the nearest minute.

(D) Known weight of test material or test weights.

(E) Weight of test material or test weights recorded by scale.

(F) Percent error as determined by subtracting the known weight of the test material or test weights from the weight recorded on the scale, dividing that amount by the known weight of the test material or test weights, and multiplying by 100.

(iv) Verify that the percent error in each scale test as determined in paragraph (b)(3)(iii)(F) of this section is less than or equal to 3 percent. If the error exceeds this amount the scale may be retested, recalibrated, or repaired. A scale test verifying that the scale is weighing accurately must be conducted and recorded before the vessel can continue weighing catch.

(v) Maintain the test report form on board the vessel until the end of the fishing year during which the tests were conducted and make the report forms available to observers, NMFS personnel, or an authorized officer. In addition, the scale test report forms must be retained by the vessel owner for 3 years after the end of the fishing year during which the tests were performed. All scale test report forms must be signed by the vessel operator.

(4) *Scale maintenance*. The vessel operator must maintain the scale in proper operating condition throughout the period of its use and assure that adjustments made to the scale are made so as to bring the performance errors as close as practicable to a zero value.

(5) *Printed reports from the scale*. Printed reports from the scale must be maintained on board the vessel until the end of the fishing year during which the reports were made and be made available to observers, NMFS personnel, or an authorized officer. In addition, printed reports must be retained by the vessel owner for 3 years after the end of the fishing year during which the printouts were made. All printed reports from the scale must be signed by the vessel operator.

(i) *Reports of catch weight*. Reports must be printed at least once each 24-hour period in which the scale is being used to weigh catch or before any information stored in the scale computer memory is replaced. The printed catch report must include the information specified in Appendix A, sections 2.3.1.8, 3.3.1.7, or 4.3.1.5. The haul or set number recorded on the scale print-out must correspond with haul or set numbers recorded in the processor's daily cumulative production logbook. Scale weights indicated by the scale may not be adjusted.

(ii) *Printed report of scale tests or adjustments*. The printed report must include the information specified in Appendix A, sections 2.3.1.11(b), 3.3.1.12(b), and 4.3.1.8(b). 3. Appendix A to Part 679 is added to read as follows:

Appendix A to Part 679—At-Sea Scales Handbook: Performance and Technical Requirements for At-Sea Scales in the Groundfish Fisheries off Alaska

Table of Contents

1.0 *Introduction*

(a) This handbook contains the performance and technical requirements for scales required under 50 CFR part 679 to weigh, at sea, catch from the groundfish fisheries off Alaska. These commercial fisheries are managed under the *Fishery Management Plan for Groundfish of the Gulf of Alaska* and the *Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Islands Area* which were prepared by the North Pacific Fishery Management Council under the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801, *et seq.*).

(b) This handbook was prepared by the National Marine Fisheries Service, Alaska Regional Office, with the assistance of a contracted technical advisor. The performance and technical requirements in this document have not been reviewed or endorsed by the National Conference on Weights and Measures. The handbook is published by NMFS because specifications for scales used to weigh at sea have not been developed by any national or international weights and measures agency or organization.

(c) Revisions, amendments, or additions to this document may be made by notification in the **Federal Register** and an opportunity for public comment prior to a final decision on the amendments. Persons wishing to propose amendments should submit proposals in writing to the Administrator, Alaska Region, NMFS, P.O. Box 21668, Juneau, AK 99802.

(d) *Types of scales covered by handbook*—This handbook contains performance and technical requirements for four types of scales. Section 2 contains requirements for belt scales. Section 3 contains requirements for automatic hopper scales. Section 4 contains requirements for platform and hanging scales. Certification of any other devices for use to weigh catch at sea will require an amendment to § 679.28 and this handbook (Appendix A).

(e) *Testing and Certification Requirements for At-Sea Scales*—Scales used to weigh catch at sea are required to comply with performance and technical requirements in four categories:

(1) Type evaluation or laboratory tests of each model of scale,

(2) initial inspection by an authorized weights and measures inspector of each scale installed on a vessel; (3) periodic re-inspection by an authorized weights and measures inspector; and (4) at-sea tests of the scale's accuracy performed by vessel crew and witnessed by a NMFS-certified observer. This handbook contains only the performance and technical requirements for type evaluation and certification by a weights and measures inspector. Regulations implementing the requirements in this handbook and additional requirements for scales certified to weigh catch at sea are found at § 679.28.

2.0 *Belt Scales*

2.1 *Applicability*. The requirements in this section apply to a scale or scale system that employs a conveyor belt in contact with a weighing element to determine the weight of a bulk commodity being conveyed across the scale.

2.2 *Performance Requirements*—2.2.1 *Maximum Permissible Errors (mpe).* The following mpes are specified for laboratory tests and initial and periodic inspections of scales in a stationary installation. A stationary vessel refers to a vessel that is tied up at a dock or anchored near shore and is not under power at sea.

2.2.1.1 *Laboratory Tests*. Procedures for disturbance tests and influence factors are in Annex A. The following mpes are specified for these tests.

a. *Disturbances*. The mpe is ±0.18 percent of the weight of the load totalized.

b. *Influence Factors*. The mpe is ±0.25 percent of the weight of the load totalized.

c. *Temperature Effect at Zero Flow Rate.* The difference between the values obtained at zero flow rate taken at temperatures that differ by 10° C must not be greater than 0.035 percent of the weight of the load totalized at the maximum flow-rate for the time of the test.

2.2.1.2 *Zero Load Tests*. The mpe for zero load tests conducted in a laboratory or on a scale installed on a stationary vessel is ±0.1 percent or 1 scale division (d).

2.2.1.3 *Material Tests.* The mpe for material tests conducted in a laboratory or on a scale installed on a stationary vessel is ±1.0 percent of the known weight of the test material.

2.2.2 *Minimum Flow Rate (Qmin).* The minimum flow rate must be specified by the manufacturer and must not be greater than 35 percent of the rated capacity of the scale in kilograms (kg) or metric tons per hour (mt/hr).

2.2.3 *Minimum Totalized Load (*Σmin). The minimum totalized load must not be less than the greater of:

a. 2 percent of the load totalized in 1 hour at the maximum flow rate,

b. the load obtained at the maximum flow rate in 1 revolution of the belt, or

c. a load equal to 800 scale divisions (d).

2.2.4 *Influence Quantities.* The following requirements apply to influence factor tests conducted in the laboratory.

2.2.4.1 *Temperature.* A belt scale must comply with the performance and technical requirements at a range of temperatures from -10° C to +40° C. However, for special applications the temperature range may be different, but the range must not be less than 30° C and must be so specified on the descriptive markings.

2.2.4.2 *Power Supply.* A belt scale must comply with the performance and technical requirements when operated within a range of –15 percent to +10 percent of the power supply specified on the descriptive markings.

2.3 *Technical Requirements.*

2.3.1 *Indicators and Printers.*

2.3.1.1 *General.* A belt scale must be equipped with a primary indicator in the form of a master weight totalizer, a printer, and a rate of flow indicator. It must also be equipped with auxiliary means to indicate or print values for specified partial loads. The indications and printed representations must be clear, definite, accurate, and easily read under any conditions of normal operation of the belt scale.

2.3.1.2 *Values Defined.* If indications or printed representations are intended to have specific values, these must be defined by a sufficient number of figures, words, or symbols, uniformly placed with reference to the indications or printed representations and as close as practicable to the indications or printed representations, but not so positioned as to interfere with the accuracy of reading.

2.3.1.3 *Units.* The weight units indicated must be in terms of kilograms.

2.3.1.4 *Value of the Scale Division*. The value of the scale division (d) expressed in a unit of weight must be equal to 1, 2, or 5, or a decimal multiple or sub-multiple of 1, 2, or 5.

2.3.1.5 *Range of Indication.* The master weight totalizer must be capable of indicating at least 99,999,999 kilograms. The auxiliary means must be capable of indicating at least the weight of the amount of fish that can be harvested in 1 haul or set.

2.3.1.6 *Resettable.* The master weight totalizer must not be resettable to zero without breaking a security means. The auxiliary means to indicate or print specified partial loads must be resettable to zero.

2.3.1.7 *Rate of Flow Indicator.* Permanent means must be provided to produce an audio or visual signal when the rate of flow is less than the minimum flow rate or greater than 98 percent of the maximum flow rate.

2.3.1.8 *Printed Information.* The information printed must include:

a. For fish weight:

i. the Federal fisheries or processor permit number;

ii. the haul or set number;

iii. month, day, year, and time (to the nearest minute) weighing catch from the haul or set started;

iv. month, day, year, and time (to the nearest minute) weighing catch from the haul or set ended; and

v. the total cumulative weight of catch in the haul or set for each haul or set.

b. For the event logger: information specified in Section 2.3.1.11.b.

2.3.1.9 *Permanence of Markings.* All required indications, markings, and instructions must be distinct and easily readable and must be of such character that they will not tend to become obliterated or illegible.

2.3.1.10 *Power Loss.* In the event of a power failure, means must be provided to retain in a memory the totalized load.

2.3.1.11 *Adjustable Components.*

a. An adjustable component that can affect the performance of the scale must be held securely in position and must not be capable of adjustment without breaking a security means, or

b. An audit trail in the form of an event logger must provide the following information in electronic and printed form:

1. a unique identifying number from 000 to 999 to identify the type of adjustment being made to any parameter that affects the performance of the scale,

2. the parameter and amount of change,

3. the source of the change, and

4. the date and time (to the nearest minute) of the change.

2.3.2 *Weighing Elements.*

2.3.2.1 *Speed Measurement.* A belt scale must be equipped with means to accurately sense the belt travel and/or speed whether the belt is loaded or empty.

2.3.2.2 *Conveyer Belt.* The weight per unit length of the conveyor belt must be practically constant. Belt joints must be such that there are no significant effects on the weighing results.

2.3.2.3 *Overload Protection.* The load receiver must be equipped with means so that an overload of 150 percent or more of the capacity must not affect the metrological characteristics of the belt scale.

2.3.2.4 *Speed Control.* The speed of the belt must not vary by more than 5 percent of the nominal speed.

2.3.2.5 *Adjustable Components.* An adjustable component that can affect the performance of the belt scale must be held securely in position and must not be capable of adjustment without breaking a security means.

2.3.2.6 *Motion Compensation.* A belt scale must be equipped with automatic means to compensate for the motion of a vessel at sea so that the weight values indicated are within the maximum permissible errors. Such means shall be a reference load cell and a reference mass weight or other equally effective means. When equivalent means are utilized, the manufacturer must provide NMFS with laboratory or field test results demonstrating that the scale can weigh accurately at sea.

2.3.3 *Installation Conditions.* A belt scale must be rigidly installed in a level condition.

2.3.4 *Marking.* A belt scale must be marked with the following:

a. Name, initials, or trademark of the manufacturer or distributer.

b. Model designation.

c. Non-repetitive serial number.

d. Maximum flow rate (Qmax).

e. Minimum flow rate (Qmin).

f. Minimum totalized load (Σmin).

g. Belt speed.

h. Weigh length.

i. Maximum capacity (Max).

j. Temperature range (if applicable).

k. Mains voltage.

2.3.4.1 *Presentation.* The markings must be reasonably permanent and of such size, shape, and clarity to provide easy reading in normal conditions of use. They must be grouped together in a place visible to the operator.

2.4 *Tests.*

2.4.1 *Minimum Test Load.* The minimum test load must be the greater of:

a. 2 percent of the load totalized in 1 hour at the maximum flow rate,

b. the load obtained at maximum flow rate in one revolution of the belt, or

c. a load equal to 800 scale divisions.

2.4.2 *Laboratory Tests.*

2.4.2.1 *Influence Quantity and Disturbance Tests.* Tests must be conducted according to Annex A and the results of these tests must be within the values specified in section 2.2.1.1.

2.4.2.2 *Zero Load Tests.* A zero load test must be conducted for a time equal to that required to deliver the minimum totalized load (Σmin). At least two zero load tests must be conducted prior to a material test. The results of these tests must be within the values specified in section 2.2.1.2.

2.4.2.3 *Material Tests.* At least one material test must be conducted with the weight of the material or simulated material equal to or greater than the minimum test load. The results of these tests must be within the values specified in section 2.2.1.3.

2.4.3 *Initial and Periodic Scale Inspections.*

2.4.3.1 *Zero Load Tests.* A zero load test must be conducted for a time equal to that required to deliver the minimum totalized load (Σmin). At least one zero load test must be conducted prior to each material test. The results of this test must be within the values specified in section 2.2.1.2.

2.4.3.2 *Material Tests.* At least one material or simulated material test must be conducted with the weight of the material or simulated material equal to or greater than the minimum test load. The results of these tests must be within the values specified in section 2.2.1.3.

3.0 Automatic Hopper Scales

3.1 *Applicability.* The requirements in this section apply to a scale or scale system that is designed for automatic weighing of a bulk commodity in predetermined amounts.

3.2 *Performance Requirements*—3.2.1 *Maximum Permissible Errors (mpe).* The following mpes are specified for laboratory tests and initial and periodic inspections of scales in a stationary installation. A stationary vessel refers to a vessel that is tied up at a dock or anchored near shore and is not under power at sea.

3.2.1.1 *Laboratory Tests.* Procedures for disturbance tests and influence factors are in Annex A. The following mpes are specified for these tests.

a. *Disturbances.* Significant fault (sf) (±1 scale division).

b. *Influence Factors.* The mpe is ±0.1 percent of test load.

3.2.1.2 *Increasing and Decreasing Load Tests.* The mpe for increasing and decreasing load tests conducted in a laboratory or on a scale installed on a stationary vessel is ± 1.0 percent of the test load.

3.2.2 *Minimum Weighment (*Σmin). The minimum weighment must not be less than 20 percent of the weighing capacity, or a load equal to 100 scale intervals (d), except for the final weighment of a lot.

3.2.3 *Minimum Totalized Load (Lot).* The minimum totalized load must not be less than 4 weighments.

3.2.4 *Influence Quantities.* The following requirements apply to influence factor tests conducted in the laboratory.

3.2.4.1 *Temperature.* A hopper scale must comply with the metrological and technical requirements at temperatures from − 10° C to +40° C. However, for special applications the temperature range may be different, but the range must not be less than 30° C and must be so specified on the descriptive markings.

3.2.4.1.1 *Operating Temperature.* A hopper scale must not display or print any usable weight values until the operating temperature necessary for accurate weighing and a stable zero-balance condition have been attained.

3.2.4.2 *Power Supply.* A hopper scale must comply with the performance and technical requirements when operated within − 15 percent to +10 percent of the power supply specified on the descriptive markings.

3.3 *Technical Requirements*—3.3.1 *Indicators and Printers*—3.3.1.1 *General.* A hopper scale must be equipped with an indicator and a printer that indicates and prints the weight of each load and a no-load reference value and also the total accumulated weight of a lot. It must also be equipped with auxiliary means to indicate or print values for a final partial load. The indications and printed information must be clear, definite, accurate, and easily read under any conditions of normal operation of the hopper scale.

3.3.1.2 *Values Defined.* If indications or printed representations are intended to have specific values, these must be defined by a sufficient number of figures, words, or symbols, uniformly placed with reference to the indications or printed representations and as close as practicable to the indications or printed representations but not so positioned as to interfere with the accuracy of reading.

3.3.1.3 *Units.* The weight units indicated must be in terms of kilograms.

3.3.1.4 *Value of the Scale Division.* The value of the scale division (d) expressed in a unit of weight must be equal to 1, 2, or 5, or a decimal multiple or sub-multiple of 1, 2, or 5.

3.3.1.5 *Weighing Sequence.* For hopper scales used to receive (weigh in), the no-load reference value must be determined and printed only at the beginning of each weighing cycle. For hopper scales used to deliver (weigh out), the no-load reference value must be determined and printed only after the gross load weight value for each weighing cycle has been indicated and printed.

3.3.1.6 *Printing Sequence.* Provision must be made so that all weight values are indicated until the completion of the printing of the indicated values.

3.3.1.7 *Printed Information.* The information printed must include:

a. For fish weight:

i. The Federal fisheries or processor permit number.

ii. The haul or set number.

iii. Month, day, year, and time (to the nearest minute) that weighing catch from the haul or set started.

iv. Month, day, year, and time (to the nearest minute) that weighing catch from the haul or set ended.

v. Net weight of the individual loads and the totalized weight of the fish in a haul or set.

b. For the event logger: Information specified in Section 3.3.1.12.b.

3.3.1.8 *Permanence of Markings.* All required indications, markings, and instructions must be distinct and easily readable and must be of such character that

they will not tend to become obliterated or illegible.

3.3.1.9 *Range of Indication.* The total accumulated weight indicator and printer must be capable of indicating and printing at least 99,999,999 kg. The auxiliary means must be capable of indicating at least the weight of the amount of fish that can be harvested in 1 haul or set.

3.3.1.10 *Non-resettable Values.* The totalized accumulated weight must not be resettable to zero without breaking a security means.

3.3.1.11 *Power Loss.* In the event of a power failure, means must be provided to retain in a memory the total accumulated weight.

3.3.1.12 *Adjustable Components.*

a. An adjustable component that can affect the performance of the hopper scale must be held securely in position and must not be capable of adjustment without breaking a security means, or

b. An audit trail in the form of an event logger must provide the following information in electronic and printed form:

1. A unique identifying number from 000 to 999 to identify the type of adjustment being made to any parameter that affects the performance of the scale.

2. The parameter and amount of change.

3. The source of the change.

4. The date and time (to the nearest minute) of the change.

3.3.1.13 *Zero-Load Adjustment.* A hopper scale must be equipped with a manual or semi-automatic (push-button) means that can be used to adjust the zero-load balance or no-load reference value.

3.3.1.13.1 *Manual.* A manual means must be operable or accessible only by a tool outside of, or entirely separate from, this mechanism or enclosed in a cabinet.

3.3.1.13.2 *Semi-automatic.* A semi-automatic means must only be operable when the indication is stable within ±1 scale division, and cannot be operated during a weighing cycle (operation).

3.3.1.14 *Damping Means.* A hopper scale must be equipped with effective automatic means to bring the indications quickly to a readable stable equilibrium. Effective automatic means must also be provided to permit the recording of weight values only when the indication is stable within plus or minus one scale division.

3.3.2 *Interlocks and Gate Control.* A hopper scale must have operating interlocks so that:

a. Product cannot be weighed if the printer is disconnected or subject to a power loss.

b. The printer cannot print a weight if either of the gates leading to or from the weigh hopper is open.

c. The low paper sensor of the printer is activated.

d. The system will operate only in the sequence intended.

e. If the overfill sensor is activated, this condition is indicated to the operator and printed.

3.3.3 *Overfill Sensor.* The weigh hopper must be equipped with an overfill sensor that will cause the feed gate to close, activate an alarm, and stop the weighing operation until the overfill condition has been corrected.

3.3.4 *Weighing Elements.*

3.3.4.1 *Overload Protection.* The weigh hopper must be equipped with means so that an overload of 150 percent or more of the capacity of the hopper must not affect the metrological characteristics of the belt scale.

3.3.4.2 *Adjustable Components.* An adjustable component that can affect the performance of the hopper scale must be held securely in position and must not be capable of adjustment without breaking a security means.

3.3.4.3 *Motion Compensation.* A hopper scale must be equipped with automatic means to compensate for the motion of a vessel at sea so that the weight values indicated are within the maximum permissible errors. Such means shall be a reference load cell and a reference mass weight or other equally effective means. When equivalent means are utilized, the manufacturer must provide NMFS with laboratory or field test results demonstrating that the scale can weigh accurately at sea.

3.3.5 *Installation Conditions.* A hopper scale must be rigidly installed in a level condition.

3.3.6 *Marking.* A hopper scale must be marked with the following:

a. Name, initials, or trademark of the manufacturer or distributer.

b. Model designation.

c. Non-repetitive serial number.

d. Maximum capacity (Max).

e. Minimum capacity (min).

f. Minimum totalized load (Σmin).

g. Minimum weighment.

h. Value of the scale division (d).

i. Temperature range (if applicable).

j. Mains voltage.

3.3.6.1 *Presentation.* Descriptive markings must be reasonably permanent and grouped together in a place visible to the operator.

3.4 *Tests.*

3.4.1 *Standards.* The error of the standards used must not exceed 25 percent of the mpe to be applied.

3.4.2 *Laboratory Tests.*

3.4.2.1 *Influence Quantity and Disturbance Tests.* Tests must be conducted according to Annex A and the results of these tests must be within the values specified in section 3.2.1.1.

3.4.2.2 *Performance Tests.* Performance tests must be conducted as follows:

a. *Increasing load test.* At least five increasing load tests must be conducted with test loads at the minimum load, at a load near capacity, and at 2 or more critical points in between.

b. *Decreasing load test.* A decreasing load test must be conducted with a test load approximately equal to one-half capacity when removing the test loads of an increasing load test.

3.4.3 *Initial and Periodic Scale Inspections.*

At least two increasing load tests and two decreasing load tests must be conducted as specified in 3.4.2.2. Additionally, tests must be conducted with test loads approximately equal to the weight of loads at which the scale is normally used.

4.0 *Platform Scales and Hanging Scales*

4.1 *Applicability.* The requirements in this section apply to platform and hanging scales.

4.2 *Performance Requirements.*

4.2.1 *Maximum Permissible Errors (mpe).* The following mpes are specified for laboratory tests and initial and periodic inspections of scales in a stationary installation. A stationary vessel refers to a vessel that is tied up at a dock or anchored near shore and is not under power at sea.

4.2.1.1 *Laboratory Tests.* Procedures for disturbance tests and influence factors are in Annex A. The following mpes are specified for these tests.

a. *Disturbances.* Significant fault (±1 scale division)

b. *Influence Factors.* Mpes are in Table 1 below.

4.2.1.2 *Increasing and Decreasing Load and Shift Tests.* The mpes for increasing and decreasing load and shift tests conducted in a laboratory or on a scale installed on a stationary vessel are in Table 1.

TABLE 1

Test load in scale divisions (d)		Maximum permissible error (d)	
Class III	Class IIII	Type Evaluation and Initial verification	In-service
0 < m* ≤ 500	0 < m ≤ 50	0.5	1
500 < m ≤ 2000	50 < m ≤ 200	1.0	2
2000 < m	200 < m	1.5	3

*Mass or weight of the test load.

4.2.2 *Minimum Load:* Class III scale 20 d, Class III scale 10 d.

4.2.3 *Influence Quantities.* The following requirements apply to influence factor tests conducted in the laboratory.

4.2.3.1 *Temperature.* A scale must comply with the performance and technical requirements at temperatures from −10° C to +40° C. However, for special applications the temperature range may be different, but the range must not be less than 30° C and must be so specified on the descriptive markings.

4.2.3.1.1 *Operating Temperature.* A scale must not display or print any usable weight values until the operating temperature necessary for accurate weighing and a stable zero-balance condition have been attained.

4.2.3.2 *Power Supply.* A scale must comply with the performance and technical requirements when operated within −15 percent to +10 percent of the power supply specified on the descriptive markings.

4.3 *Technical Requirements*—4.3.1 *Indicators and Printers*—4.3.1.1 *General.* A scale must be equipped with an indicator and a printer. The indications and printed information must be clear, definite, accurate, and easily read under any conditions of normal operation of the scale.

4.3.1.2 *Values Defined.* If indications or printed representations are intended to have specific values, these must be defined by a sufficient number of figures, words, or symbols, uniformly placed with reference to the indications or printed representations and as close as practicable to the indications or printed representations, but not so positioned as to interfere with the accuracy of reading.

4.3.1.3 *Units.* The weight units indicated must be in terms of kilograms and decimal subdivisions.

4.3.1.4 *Value of the Scale Division.* The value of the scale division (d) expressed in a unit of weight must be equal to 1, 2, or 5, or a decimal multiple or sub-multiple of 1, 2, or 5.

4.3.1.5 *Printed Information.* The information printed must include:

a. For fish weight:

i. The Federal fisheries or processor permit number.

ii. The haul or set number.

iii. Month, day, year, and time (to the nearest minute) of weighing.

iv. Net weight of the fish.

v. For the event logger: information specified in section 4.3.1.8.

4.3.1.6 *Permanence of Markings.* All required indications, markings, and instructions must be distinct and easily readable and must be of such character that they will not tend to become obliterated or illegible.

4.3.1.7 *Power Loss.* In the event of a power failure, means must be provided to retain in a memory the weight of the last weighment if it is a non-repeatable weighment.

4.3.1.8 *Adjustable Components.*

a. An adjustable component that can affect the performance of the scale must be held securely in position and must not be capable of adjustment without breaking a security means, or

b. An audit trail in the form of an event logger must provide the following information in electronic and printed form:

1. A unique identifying number from 000 to 999 to identify the type of adjustment being made to any parameter that affects the performance of the scale.

2. The parameter and amount of change.

3. The source of the change.

4. The date and time (to the nearest minute) of the change.

4.3.1.9 *Zero-Load Adjustment.* A scale must be equipped with a manual or semi-automatic (push-button) means that can be used to adjust the zero-load balance or no-load reference value.

4.3.1.9.1 *Manual.* A manual means must be operable or accessible only by a tool outside of or entirely separate from this mechanism or enclosed in a cabinet.

4.3.1.9.2 *Semi-automatic.* A semi-automatic means must meet the provisions of 3.1.8 or must only be operable when the indication is stable within ±1 scale division and cannot be operated during a weighing cycle (operation).

4.3.1.10 *Damping Means.* A scale must be equipped with effective automatic means to bring the indications quickly to a readable stable equilibrium. Effective automatic means must also be provided to permit the recording of weight values only when the indication is stable within plus or minus one scale division.

4.3.2 *Weighing Elements*—4.3.2.1 *Overload Protection.* The scale must be so designed that an overload of 150 percent or more of the capacity must not affect the metrological characteristics of the scale.

4.3.2.2 *Adjustable Components.* An adjustable component that can affect the performance of the scale must be held securely in position and must not be capable of adjustment without breaking a security means.

4.3.2.3 *Motion Compensation.* A hopper scale must be equipped with automatic means to compensate for the motion of a vessel at sea so that the weight values indicated are within the maximum permissible errors. Such means shall be a reference load cell and a reference mass weight or other equally effective means. When equivalent means are utilized, the manufacturer must provide NMFS with laboratory or field test results demonstrating that the scale can weigh accurately at sea.

4.3.3 *Installation Conditions.* A platform scale must be rigidly installed in a level condition. A hanging scale must be freely suspended from a fixed support or a crane when in use.

4.3.4 *Marking.* A scale must be marked with the following:

a. Name, initials, or trademark of the manufacturer or distributer.

b. Model designation.

c. Non-repetitive serial number.

d. Maximum capacity (Max).

e. Minimum capacity (min).

f. Temperature range (if applicable).

g. Mains voltage.

4.3.4.1 *Presentation.* Descriptive markings must be reasonably permanent and grouped together in a place visible to the operator.

4.4 *Tests.*

4.4.1 *Standards.* The error of the standards used must not exceed 25 percent of the mpe applied.

4.4.2 *Laboratory Tests*—4.4.2.1 *Influence Quantities and Disturbance Tests.* Tests must be conducted according to Annex A and the results of these tests must be within the values specified in section 4.2.1.1.

4.4.2.2 *Performance Tests.* Performance tests must be conducted as follows:

a. *Increasing load test.* At least five increasing load tests must be conducted with test loads at the minimum load, at a load near capacity, and at 2 or more critical points in between.

b. *Shift test (platform scales only).* A shift test must be conducted during the increasing load test at one-third capacity test load centered in each quadrant of the platform.

c. *Decreasing load test.* A decreasing load test must be conducted with a test load approximately equal to one-half capacity when removing the test loads of an increasing load test.

4.4.3 *Initial and Periodic Scale Inspections.*

At least two increasing load tests, shift tests, and decreasing load tests must be conducted as specified in 4.4.2.2. Additionally tests must be conducted with test loads approximately equal to the weight of loads at which the scale is normally used. The results of all tests must be as specified in Table 1.

5.0 *Definitions*

Audit trail—An electronic count and/or information record of the changes to the values of the calibration or configuration parameters of a device.

Automatic Hopper Scale—A hopper scale adapted to the automatic weighing of a bulk commodity (fish) in predetermined amounts. Capacities vary from 50 lb (22.7 kg) to 100,000 lb (45.36 mt). Generally equipped with a control panel, with functions to be set by an operator, including the start of an automatic operation. (See definition of hopper scale).

Belt Scale—A scale that employs a conveyor belt in contact with a weighing element to determine the weight of a bulk commodity being conveyed. It is generally a part of a system comprised of an input conveyor, the flow scale, and an output conveyor. The conveyor belt may be constructed of various materials, including vulcanized rubber, canvas, and plastic. The capacity is generally specified in terms of the amount of weight that can be determined in a specified time, and can vary from for example 1 ton per hour to 100 or more tons per hour. An operator generally directs the flow of product onto the input conveyor.

Calibration Mode—A means by which the span of a scale can be adjusted by placing a known ''test weight'' on the scale and manually operating a key on a key board.

Disturbances—An influence that may occur during the use of a scale but is not within the rated operating conditions of the scale.

Event logger—A form of audit trail containing a series of records where each record contains the number from the event counter corresponding to the change to a

sealable parameter, the identification of the parameter that was changed, the time and date when the parameter was changed, and the new value of the parameter.

Final Weighment—The last partial load weighed on a hopper scale that is part of the weight of many loads (haul, set, etc.).

Hanging Scale—A scale that is designed to weigh a load that is freely suspended from an overhead crane or it may be permanently installed in an overhead position. The load receiver may be a part of the scale such as a pan suspended on chains, or simply a hook that is used to ''pick-up'' the container of the commodity to be weighed. The technology employed may be mechanical, electro-mechanical, or electronic. The loads can be applied either manually or by such means as a crane.

Hopper Scale—A scale designed for weighing individual loads of a bulk commodity (fish). The load receiver is a cylindrical or rectangular container mounted on a weighing element. The weighing element may be mechanical levers, a combination of levers and a load cell, or all load cells. The capacity can vary from ≤ 50 lb (22.7 kg) to > 100,000 lb (45.36 mt). The loads are applied from a bulk source by such means as a conveyor or storage hopper. Each step of the weighing process, that is the loading and unloading of the weigh hopper, is controlled by an operator.

Indicator—That part of a scale that indicates the quantity that is being weighed.

Influence Factor—A value of an influence quantity, e.g., 10°, that specifies the limits of the rated operating conditions of the scale.

Influence Quantity—A quantity that is not the subject of the measurement but which influences the measurement obtained within the rated operating conditions of the scale.

Influence Quantity and Disturbance Tests—Type evaluation tests conducted in a laboratory to determine the capability of the scale under test to perform correctly in the environmental influences in which they are used and when subjected to certain disturbances that may occur during the use of the scale.

Initial Verification—The first evaluation (inspection and test) of a production model of a weighing instrument that has been type evaluated to determine that the production model is consistent with the model that had been submitted for type evaluation.

Known Weight Test—A test in which the load applied is a test weight with a known value simulating the weight of the material that is usually weighed.

Load Receiver—That part of the scale in which the quantity is placed when being weighed.

Material Test—A test using a material that is the same or similar to the material that is usually weighed, the weight of which has been determined by a scale other than the scale under test.

Maximum flow-rate—The maximum flow-rate of material specified by the manufacturer at which a belt scale can perform correctly.

Minimum flow-rate—The minimum flow-rate specified by the manufacturer at which a belt scale can perform correctly.

Minimum Load—The smallest weight load that can be determined by the scale that is considered to be metrologically acceptable.

Minimum Totalized Load—The smallest weight load that can be determined by a belt scale that is considered to be metrologically acceptable.

Minimum Weighment—The smallest weight that can be determined by a hopper scale that is considered to be metrologically acceptable.

Motion Compensation—The means used to compensate for the motion of the vessel at sea.

No-load Reference Value—A weight value obtained by a hopper scale when the load receiver (hopper) is empty of the product that was or is to be weighed.

Non-repeatable Weighment—A process where the product after being weighed is disposed with in such a manner that it cannot be retrieved to be reweighed.

Number of Scale Divisions (n)—The number of scale divisions of a scale in normal operation. It is the quotient of the scale capacity divided by the value of the scale division. n = Max/d

Performance Requirements—A part of the regulations or standards that applies to the weighing performance of a scale, e.g., maximum permissible errors.

Performance Test—A test conducted to determine that the scale is performing within the maximum permissible errors applicable.

Periodic Verification—A verification of a weighing instrument at an interval that is specified by regulation or administrative ruling.

Platform Scale—A scale by the nature of its physical size, arrangement of parts, and relatively small capacity (generally 500 lb (226.8 kg) or less) that is adapted for use on a bench or counter or on the floor. Load receiver dimensions include, for example, 5 × 5 inches (12.25 × 12.24 cm), 18 × 24 inches (45.7 × 61.0 cm), and 30 × 30 inches (76.2 × 76.2 cm). A platform scale can be self contained, that is, the indicator and load receiver and weighing elements are all comprised of a single unit, or the indicator can be connected by cable to a separate load receiver and weighing element. The technology used may be mechanical, electro-mechanical, or electronic. Loads are applied manually.

Rated Capacity—The maximum flow-rate in terms of weight per unit time specified by the manufacturer at which a belt scale can perform correctly.

Scale Division (d)—The smallest digital subdivision in units of mass that is indicated by the weighing instrument in normal operation.

Sealing—A method used to prevent the adjustment of certain operational characteristics or to indicate that adjustments have been made to those operational characteristics.

Security Seals or Means—A physical seal such as a lead and wire seal or a key or code that when a change is made in the operating or performance characteristics of a scale it becomes evident.

Significant Fault—An error greater than the value specified for a particular scale. For a belt scale: A fault greater than 0.18 percent of the weight value equal to the minimum totalized load. For all other scales: 1 scale division (d). A significant fault does not include faults that result from simultaneous and mutually independent causes in the belt scale; faults that imply the impossibility of performing any measurement; transitory faults that are momentary variations in the indications that cannot be interpreted, memorized, or transmitted as a measurement result; faults so serious that they will inevitably be noticed by those interested in the measurement.

Simulated Material Test—A test in which the load applied is test material simulating the weight of the material that is usually weighed.

Simulated Test—A test in which the weight indications are developed by means other than weight, e.g., a load cell simulator.

Stationary Installation—An installation of a scale in a facility on land or a vessel that is tied-up to a dock or in dry dock.

Subsequent Verification—Any evaluation of a weighing instrument following the initial verification.

Suitability for Use—A judgement that must be made that certain scales by nature of their design are appropriate for given weighing applications.

Technical Requirements—A part of the regulations or standards that applies to the operational functions and characteristics of a scale, e.g., capacity, scale division, tare.

Testing Laboratory—A facility for conducting type evaluation examinations of a scale that can establish its competency and proficiency by such means as ISO Guide 25, ISO 9000, EN 45011, NVLAP, NTEP).

Type Evaluation—A process for evaluating the compliance of a weighing instrument with the appropriate standard or regulation.

User Requirements—A part of the regulations or standards that applies to the operator/owner of the scale.

Weighment—A single complete weighing operation.

Annex A to Appendix A—Influence Quantity and Disturbance Tests

A.1 General—Included in this Annex are tests that are intended to ensure that electronic scales can perform and function as intended in the environment and under the conditions specified. Each test indicates, where appropriate, the reference condition under which the intrinsic error is determined.

A.2 Test Considerations

A.2.1 All electronic scales of the same category must be subjected to the same performance test program.

A.2.2 Tests must be carried out on fully operational equipment in their normal operational state. When connected in other than a normal configuration, the procedure must be mutually agreed to by NMFS and the applicant.

A.2.3 When the effect of one factor is being evaluated, all other factors are to be held relatively constant, at a value close to normal.

A.2.3.1 The temperature is deemed to be practically constant when the difference between the extreme temperatures noted during the test does not exceed 5° C and the variation in time does not exceed 5° C per hour.

A.2.4 Energize the equipment under test (EUT) for a period of time at least equal to the warm-up time specified by the manufacturer and maintain throughout the duration of the test.

A.3 Tests

Test	Characteristics under test	Conditions applied
A.3.1 Static temperatures.	Influence factor.	mpe
A.3.2 Damp heat, steady state.	Influence factor.	mpe
A.3.3 Power voltage variation.	Influence factor.	mpe
A.3.4 Short time power reduction.	Disturbance	sf
A.3.5 Bursts	Disturbance	sf
A.3.6 Electrostatic discharge.	Disturbance	sf
A.3.7 Electromagnetic susceptibility.	Disturbance	sf

A.3 Tests

A.3.1 Static Temperatures

Test method: Dry heat (non condensing) and cold.

Object of the test: To verify compliance with the applicable maximum permissible under conditions of high and low temperature.

Reference to standard: See Bibliography (1).

Test procedure in brief: The test consists of exposure of the EUT to the high and low temperatures specified in section 2.2.4.1 for belt scales, section 3.2.4.1 for automatic hopper scales, and section 4.2.3.1 for platform scales and hanging scales, under ''free air'' condition for a 2-hour period after the EUT has reached temperature stability. The EUT must be tested during a weighing operation consisting of:

For belt scales—the totalization of the Σ_{min}, 2 times each at approximately the minimum flow rate, an intermediate flow rate, and the maximum flow rate.

For platform, hanging, and automatic hopper scales—tested with at least five different test loads or simulated loads under the following conditions:

a. At a reference temperature of 20 °C following conditioning.

b. At the specified high temperature, 2 hours after achieving temperature stabilization.

c. At the specified low temperature, 2 hours after achieving temperature stabilization.

d. At a temperature of 5° C, 2 hours after achieving temperature stabilization.

e. After recovery of the EUT at the reference temperature of 20° C.

Test severities: Duration: 2 hours.

Number of test cycles: At least one cycle.

Maximum allowable variations:

All functions must operate as designed.

All indications must be within the applicable maximum permissible errors.

Conduct of test: Refer to the International Electrotechnical Commission (IEC) Publications mentioned in Bibliography (1) for detailed test procedures.

Supplementary information to the IEC test procedures

Preconditioning: 16 hours.

Condition of EUT: Normal power supplied and ''on'' for a time period equal to or greater than the warm-up time specified by the manufacturer. Power is to be ''on'' for the duration of the test.

Adjust the EUT as close to a zero indication as practicable prior to the test.

Test sequence:

Stabilize the EUT in the chamber at a reference temperature of 20° C. Conduct the tests as specified in the test procedure in brief and record the following data:

a. Date and time.

b. Temperature.

c. Relative humidity.

d. Test load.

e. Indication.

f. Errors.

g. Functions performance.

Increase the temperature in the chamber to the high temperature specified. Check by measurement that the EUT has reached temperature stability and maintain the temperature for 2 hours. Following the 2 hours, repeat the tests and record the test data indicated above.

Reduce the temperature in the chamber as per the IEC procedures to the low temperature specified. After temperature stabilization, allow the EUT to soak for 2 hours. Following the 2 hours, repeat the tests and record the test data as indicated above.

Raise the temperature in the chamber as per the IEC procedures to 5° C. After temperature stabilization, allow the EUT to soak for 2 hours. Following the 2 hours, repeat the tests and record the test data as indicated above. Note: This test relates to a −10° C to +40° C range. For special ranges, it may not be necessary.

Raise the temperature in the chamber as per the IEC procedures and to the 20° C reference temperature. After recovery, repeat the tests and record the test data as indicated above.

A.3.2 Damp Heat, Steady State

Test method: Damp heat, steady state.

Object of the test: To verify compliance with the applicable maximum permissible errors under conditions of high humidity and constant temperature.

Reference to standard: See Bibliography (2).

Test procedure in brief: The test consists of exposure of the EUT to a constant temperature at the upper limit of the temperature range and a constant relative humidity of 85 percent for a two day period. The EUT must be tested during a weighing operation consisting of:

For belt scales—the totalization of the Σ_{min}, 2 times each at approximately the minimum flow rate, an intermediate flow rate, and the maximum flow rate.

For platform, hanging, and automatic hopper scales—tested with at least five different test loads or simulated loads at a reference temperature of 20° C and a relative humidity of 50 percent following conditioning, and at the upper limit temperature and a relative humidity of 85 percent, 2 days following temperature and humidity stabilization.

Test severities:

Temperature: upper limit.

Humidity: 85 percent (non-condensing).

Duration: 2 days.

Number of test cycles: At least one test.

Maximum allowable variations:

All functions must operate as designed.

All indications must be within the applicable maximum permissible errors.

Conduct of test: Refer to the IEC Publications mentioned in Bibliography (2) for detailed test procedures.

Supplementary information to the IEC test procedures

Preconditioning: None required.

Condition of EUT:

Normal power supplied and ''on'' for a time period equal to or greater than the warm-up time specified by the manufacturer. Power is to be ''on'' for the duration of the test.

The handling of the EUT must be such that no condensation of water occurs on the EUT.

Adjust the EUT as close to a zero indication as practicable prior to the test.

Test sequence:

Allow 3 hours for stabilization of the EUT at a reference temperature of 20° C and a relative humidity of 50 percent. Following stabilization, conduct the tests as specified in the test procedures in brief and record the following data:

a. Date and time.

b. Temperature.

c. Relative humidity.

d. Test load.

e. Indication.

f. Errors.

g. Functions performance.

Increase the temperature in the chamber to the specified high temperature and a relative humidity of 85 percent. Maintain the EUT at no load for a period of 2 days. Following the 2 days, repeat the tests and record the test data as indicated above.

Allow full recovery of the EUT before any other tests are performed.

A.3.3 *Power Voltage Variation*

A.3.3.1 *AC power supply*

Test method: Variation in AC mains power supply (single phase).

Object of the test: To verify compliance with the applicable maximum permissible errors under conditions of varying AC mains power supply.

Reference to standard: See Bibliography (3)

Test procedure in brief: The test consists of subjecting the EUT to AC mains power during a weighing operation consisting of:

For belt scales—while totalizing the Σ_{min} at the maximum flow rate.

For platform, hanging, and automatic hopper scales—at no load and a test load between 50 percent and 100 percent of weighing capacity.

Test severities: Mains voltage: upper limit U (nom) +10 percent; lower limit U (nom) −15 percent.

Number of test cycles: At least one cycle.

Maximum allowable variations:

All functions must operate correctly.

All indications must be within maximum permissible errors specified in sections 2, 3, or 4 of this handbook.

Conduct of the test:

Preconditioning: None required.

Test equipment: Variable power source, Calibrated voltmeter, Load cell simulator, if applicable.

Condition of EUT:

Normal power supplied and ''on'' for a time period equal to or greater than the warm-up time specified by the manufacturer.

Adjust the EUT as close to a zero indication as practicable prior to the test.

Test sequence:

Stabilize the power supply at nominal voltage ±2 percent.

Conduct the tests specified in the test procedure in brief and record the following data:

date and time,
temperature,
relative humidity,
power supply voltage,
test load,
indications,
errors,
functions performance.

Reduce the power supply to −15 percent nominal.

Repeat the test and record the test data as indicated above.

Increase the power supply to +10 percent nominal.

Repeat the test and record the test data as indicated above.

Unload the EUT and decrease the power supply to nominal power ±2 percent.

Repeat the test and record the test data as indicated above.

Note: In case of three phase power supply, the voltage variation must apply for each phase successively. Frequency variation applies for all phases simultaneously.

A.3.3.2 *DC power supply*

Under consideration.

A.3.4 *Short Time Power Reduction*

Test method: Short time interruptions and reductions in mains voltage.

Object of the test: To verify compliance with the applicable significant fault under conditions of short time mains voltage interruptions and reductions.

Reference to standard: See Bibliography (4) IEC Publication 1000–4–11 (1994).

Test procedure in brief: The test consists of subjecting the EUT to voltage interruptions from nominal voltage to zero voltage for a period equal to 8–10 ms, and from nominal voltage to 50 percent of nominal for a period equal to 16–20 ms. The mains voltage interruptions and reductions must be repeated ten times with a time interval of at least 10 seconds. This test is conducted during a weighing operation consisting of:

For belt scales—while totalizing at the maximum flow rate at least the Σ_{min} (or a time sufficient to complete the test).

For platform, hanging, and automatic hopper scales—tested with one small test load or simulated load.

Test severities: One hundred percent voltage interruption for a period equal to 8–10 ms. Fifty percent voltage reduction for a period equal to 16–20 ms.

Number of test cycles: Ten tests with a minimum of 10 seconds between tests.

Maximum allowable variations: The difference between the weight indication due to the disturbance and the indication without the disturbance either must not exceed 1 d or the EUT must detect and act upon a significant fault.

Conduct of the test:

Preconditioning: None required.

Test equipment:

A test generator suitable to reduce the amplitude of the AC voltage from the mains. The test generator must be adjusted before connecting the EUT.

Load cell simulator, if applicable.

Condition of EUT:

Normal power supplied and ''on'' for a time period equal to or greater than the warm-up time specified by the manufacturer.

Adjust the EUT as close to zero indication as practicable prior to the test.

Test sequence:

Stabilize all factors at nominal reference conditions.

Totalize as indicated above and record the following data:

date and time,
temperature,
relative humidity,
power supply voltage,
test load,
indications,
errors,
functions performance.

Interrupt the power supply to zero voltage for a period equal to 8–10 ms. During interruption observe the effect on the EUT and record, as appropriate.

Repeat the above 4 additional times making sure that there is a 10 second interval between repetitions. Observe the effect on the EUT.

Reduce the power supply to 50 percent of nominal voltage for a period equal to 16–20 ms. During reduction observe the effect on the EUT and record, as appropriate.

Repeat the above 4 additional times making sure that there is a 10 second interval between repetitions. Observe the effect on the EUT.

A.3.5 *Bursts*

Test method: Electrical bursts.

Object of the test: To verify compliance with the provisions in this manual under conditions where electrical bursts are superimposed on the mains voltage.

Reference to standard: See Bibliography (5)

Test procedure in brief:

The test consists of subjecting the EUT to bursts of double exponential wave-form transient voltages. Each spike must have a rise in time of 5 ns and a half amplitude duration of 50 ns. The burst length must be 15 ms, the burst period (repetition time interval) must be 300 ms. This test is conducted during a weighing operation consisting of:

For belt scales—while totalizing at the maximum flow rate at least the Σ_{min} (or a time sufficient to complete the test).

For platform, hanging, and automatic hopper scales—tested with one small test load or simulated load.

Test severities: Amplitude (peak value) 1000 V.

Number of test cycles: At least 10 positive and 10 negative randomly phased bursts must be applied at 1000 V.

Maximum allowable variations: The difference between the indication due to the disturbance and the indication without the disturbance either must not exceed the values given in section T.5.5, or the EUT must detect and act upon a significant fault.

Conduct of the test: Refer to the IEC Publication referenced in Bibliography (5) for detailed test procedures.

Supplementary information to the IEC test procedures:

Test equipment:

A burst generator having an output impedance of 50 ohms.

Test conditions:

The burst generator must be adjusted before connecting the EUT. The bursts must be coupled to the EUT both on common mode and differential mode interference.

Condition of EUT: Normal power supplied and ''on'' for a time period equal to or greater than the warm-up time specified by the manufacturer.

Adjust the EUT as close to a zero indication as practicable prior to the test.

Test sequence:

Stabilize all factors at nominal reference conditions.

Conduct the test as indicated above and record the following data:

date and time,
temperature,
relative humidity,
test load,
indication,
errors,
functions performance.

Subject the EUT to at least 10 positive and 10 negative randomly phased bursts at the 1000 V mode. Observe the effect on the EUT and record, as appropriate.

Stabilize all factors at nominal reference conditions.

Repeat the test and record the test data as indicated above.

A.3.6 Electrostatic Discharge

Test method: Electrostatic discharge (ESD).

Object of the test: To verify compliance with the provisions of this manual under conditions of electrostatic discharges.

Reference to standard: See Bibliography (6)

Test procedure in brief:

A capacitor of 150 pF is charged by a suitable DC voltage source. The capacitor is then discharged through the EUT by connecting one terminal to ground (chassis) and the other via 150 ohm to surfaces which are normally accessible to the operator. This test is conducted during a weighing operation consisting of:

For belt scales—while totalizing at the maximum flow rate at least the Σ_{min} (or a time sufficient to complete the test).

For platform, hanging, and automatic hopper scales—test with one small test load or simulated load.

Test severities:

Air Discharge: up to and including 8 kV.

Contact Discharge: up to and including 6 kV.

Number of test cycles: At least 10 discharges must be applied at intervals of at least 10 seconds between discharges.

Maximum allowable variations:

The difference between the indication due to the disturbance and the indication without the disturbance either must not exceed the values indicated in section T.5.5, or the EUT must detect and act upon a significant fault.

Conduct of the test: Refer to the IEC Publication mentioned in Bibliography (4) for detailed test procedures.

Supplementary information to the IEC test procedures

Preconditioning: None required.

Condition of EUT:

The EUT without a ground terminal must be placed on a grounded plate which projects beyond the EUT by at least 0.1 m on all sides. The ground connection to the capacitor must be as short as possible.

Normal power supplied and ''on'' for a time period equal to or greater than the warm-up time specified by the manufacturer. Power is to be ''on'' for the duration of the test.

The EUT must be operating under standard atmospheric conditions for testing.

Adjust the EUT as close to a zero indication as practicable prior to the test.

Test sequence:

Stabilize all factors at nominal reference conditions.

Conduct test as indicated above and record and the following data:

date and time,
temperature,
relative humidity,
power supply voltage,
test load,
indication,
errors,
functions performance.

Approach the EUT with the discharge electrode until discharge occurs and then remove it before the next discharge. Observe the effect of the discharge on the EUT and record, as appropriate.

Repeat the above step at least 9 more times, making sure to wait at least 10 seconds between successive discharges. Observe the effect on the EUT and record as appropriate.

Stabilize all factors at nominal reference conditions.

Repeat the test and record the test data as indicated above.

A.3.7 *Electromagnetic Susceptibility*

Test method: Electromagnetic fields (radiated).

Object of the test:

To verify compliance with the provisions in this manual under conditions of electromagnetic fields.

Reference to standard: See Bibliography (7)

Test procedure in brief:

The EUT is placed in an EMI chamber and tested under normal atmospheric conditions. This test is first conducted at one load in a static mode and the frequencies at which susceptibility is evident are noted. Then tests are conducted at the problem frequencies, if any, during a weighing operation consisting of:

For belt scales—while totalizing at the maximum flow rate at least the Σ_{min} (or a time sufficient to complete the test). It is then exposed to electromagnetic field strengths as specified in the ''Test severities'' section below.

For platform, hanging, and automatic hopper scales—tested with one small test load.

The field strength can be generated in various ways:

1. the strip line is used at low frequencies (below 30 MHz or in some cases 150 MHz) for small EUT's;

2. the long wire is used at low frequencies (below 30 MHz) for larger EUT's;

3. dipole antennas or antennas with circular polarization placed 1 m from the EUT are used at high frequencies.

Under exposure to electromagnetic fields the EUT is again tested as indicated above.

Test severities: Frequency range: 26—1000 MHz

Field strength: 3 V/m

Modulation: 80 percent AM, 1 kHz sine wave

Number of test cycles: Conduct test by continuously scanning the specified frequency range while maintaining the field strength.

Maximum allowable variations: The difference between the indication due to the disturbance and the indication without the disturbance either must not exceed the values given in this manual, or the EUT must detect and act upon a significant fault.

Conduct of the test: Refer to the IEC Publication referenced in Bibliography (7) for detailed information on test procedures.

Supplementary information to the IEC test procedures.

Test conditions:

The specified field strength must be established prior to the actual testing (without the EUT in the field). At least 1 m of all external cables must be included in the exposure by stretching them horizontally from the EUT.

The field strength must be generated in two orthogonal polarizations and the frequency range scanned slowly. If antennas with circular polarization, i.e., log-spiral or helical antennas, are used to generate the electromagnetic field, a change in the position of the antennas is not required. When the test is carried out in a shielded enclosure to comply with international laws prohibiting interference to radio communications, care needs to be taken to handle reflections from the walls. Anechoic shielding might be necessary.

Condition of EUT: Normal power supplied and ''on'' for a time period equal to or greater than the warm-up time specified by the manufacturer. Power is to be ''on'' for the duration of the test. The EUT must be operating under standard atmospheric conditions for testing.

Adjust the EUT as close to a zero indication as practicable prior to the test.

Test sequence: Stabilize all factors at nominal reference conditions.

Conduct the test as indicated above and record the following data:

date and time,
temperature,
relative humidity,
test load,
indication,
errors,
functions performance.

Following the IEC test procedures, expose the EUT at zero load to the specified field strengths while slowly scanning the three indicated frequency ranges.

Observe and record the effect on the EUT.

Repeat the test as indicated above and observe and record the effect.

Stabilize all factors at nominal reference conditions.

Repeat the test and record the test data as indicated above.

Bibliography

Below are references to Publications of the International Electrotechnical Commission (IEC), where mention is made in the tests in Annex A.

1. IEC Publication 68–2–1 (1974): Basic environmental testing procedures. Part 2: Tests, Test Ad: Cold, for heat dissipating equipment under test (EUT), with gradual change of temperature.

IEC Publication 68–2–2 (1974): Basic environmental testing procedures, Part 2: Tests, Test Bd: Dry heat, for heat dissipating equipment under test (EUT) with gradual change of temperature.

IEC Publication 68–3–1 (1974): Background information, Section 1: Cold and dry heat tests.

2. IEC Publication 68–2–56 (1988): Environmental testing, Part 2: Tests, Test Cb: Damp heat, steady state. Primarily for equipment.

IEC Publication 68–2–28 (1980): Guidance for damp heat tests.

3. IEC Publication 1000–4–11 (1994): Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques, Section 11. Voltage dips, short interruptions and voltage variations immunity tests. Section 5.2 (Test levels—Voltage variation). Section 8.2.2 (Execution of the test-voltage variation).

4. IEC Publication 1000–4–11 (1994): Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques, Section 11. Voltage dips, short interruptions and voltage variations immunity tests. Section 5.1 (Test levels—Voltage dips and short interruptions. Section 8.2.1 (Execution of the test-voltage dips and short interruptions) of the maximum transit speed and the range of operating speeds.

5. IEC Publication 1000–4–4 (1995): Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques—Section 4: Electrical fast transient/burst immunity test. Basic EMC publication.

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