

ABS REGULATORY NEWS

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USE OF A POWER RESERVE AND REACTIVATION OF EPL/SHAPOLI

This Regulatory News provides guidance on use of a power reserve for overridable SHaPoLi/EPL systems.

EEXI VESSEL – EPL & SHAPOLI

In [Resolution MEPC.335\(76\)](#), 2021 *Guidelines on the Shaft / Engine Power Limitation System to Comply with the EEXI requirements and Use of a Power Reserve*, the IMO defines measures to limit the propulsion power to be considered in the EEXI calculation. Distinction is made between two different power limitation methods: Engine Power Limitation (EPL) and Shaft Power Limitation (SHaPoLi). EPL limits engine power by restricting the fuel rack (mechanically controlled engines) or the fuel index (electronically controlled engines). Besides, EPL may also directly limit the power in the engine's control system (electronically controlled engines). SHaPoLi measures the shaft power with an independent torque meter and the limitation is based on this value. Additional discussion on this calculation and the related [IACS Recommendation No.172](#), *EEXI Implementation Guidelines*, can be found in [ABS Regulatory News No.08/2022 - EEXI Actions to Take](#).

KEY NOTES

- The power limitation may be removed to facilitate use of reserve power where its use is required for the safety of the ship or safety of life at sea.
- The ship should without delay notify its Administration or RO responsible for issuing the relevant certificate when using the power reserve.
- References:
 - IMO Resolution MEPC.390(81)
 - IMO Resolution MEPC.375(80)
 - IMO Resolution MEPC.335(76)
 - IMO Resolution A.601 (15)
 - IACS Recommendation No.172

Limitation Measures	Examples from IACS Rec.172
Overridable EPL/ShaPoli	<p>Fixed in place and can only be overridden by permission of the ship's master. Can be mechanically or electronically installed.</p> <p>Examples of mechanical EPL:</p> <ul style="list-style-type: none">• Locking of the fuel index by a mechanical stop screw sealed with wire• Setting of the governor limit via sealed mechanical screw• Turbocharger cutout via butterfly valve <p>Examples of electronic EPL:</p> <ul style="list-style-type: none">• Password protected electronic locking of the fuel index or governor <p>ShaPoLi Arrangement:</p> <ul style="list-style-type: none">• Torque and rotational speed sensors• Data recorder and processing device• Control unit for calculation and Limitation of the power transmitted
Non-Overridable EPL (a.k.a. PPL – permanent power limitation)	<p>Permanent and non-reversible de-rating of the engine via:</p> <ul style="list-style-type: none">• Turbocharger(s) (can be multiple T/C's) cutout by removable blinding plate or permanent blinding plate & Turbocharger dismantling• Permanent adjustment of fuel index i.e. welded in place.• Permanent engine de-rating i.e. cylinders cutoff or reduction of combustion volume.• Propeller retrofit with shaft power limitation to prevent damage on propeller or shaft.

DOCUMENTS TO BE UPDATED

In accordance with [IMO Resolution MEPC.390\(81\)](#), the Pilot card, wheelhouse poster and maneuvering booklet (as applicable) shall be updated to include the maneuvering characteristics of the ship when the ship has all shaft and engine power available and when shaft or engine power has been limited.

Items	Overridable EPL/SHaPoLi	Non-Overridable EPL
Minimum Propulsion Power Assessment	No , unless vessel has undergone a modification so extensive that the Administration regards it as a newly constructed ship.	1. For tankers, bulk carriers, or combination carriers over 20,000 DWT, MPP Assessment to be verified according to MEPC.1/Circ. 850 latest revision. 2. No requirement for a new sea trial.
Maneuvering Information Update (Pilot Cards Update)	Yes , the existing maneuvering booklet, if available, and the Pilot Card as per IMO Resolution A.601 (15). Maneuvering information displayed on the navigating bridge to include that the ship's power has been limited for the attention of the Master to account for the ship's performance.	Yes , the stopping times and distances, and the data of the turning circles as per SOLAS Reg. II-1/28.3 and Res.MSC.137(76), to be recorded on new trials where applicable. Also, the existing maneuvering booklet, if available, and the maneuvering information displayed on the navigating bridge (pilot card and wheelhouse poster) to be updated.
NOx Technical File to be updated	No , unless engine critical settings or components affecting the NOx TF are changed. Statement from engine maker may be considered as acceptable supporting documentation and filed together with NOx TF.	1. Yes , for turbocharger dismantling/cutout and permanent engine de-rating. Engine de-rating also requires a change in name plate. 2. No , for propeller retrofit or fuel index permanent adjustment.

ONBOARD MANAGEMENT MANUAL (OMM) FOR EPL/SHAPOLI

According to IMO [Resolution MEPC.335\(76\)](#), all new and existing overridable shaft or engine power limitation systems need to be approved and verified by the Administration or the Recognized Organization (RO). This requires the Administration or the RO to approve the applied EPL/SHaPoLi and the Onboard Management Manual (OMM).

The OMM is to include the technical details and identification of key components of the applied EPL/SHaPoLi, service, maintenance and calibration requirements for SHaPoLi, methods of locking and monitoring the EPL, procedures for limiting and releasing the power reserve, time required for un-limiting the power reserve, procedures for notification of the use of power reserve, procedures for survey, etc.

REPORTING USE OF POWER RESERVE

As per [IMO Resolution MEPC.375\(80\)](#) the use of a power reserve is allowed for the purpose of securing the safety of a ship or saving life at sea as below:

1. Operating in adverse weather
2. Operating in ice-infested waters
3. Participation in search and rescue operations
4. Avoidance of pirates
5. Engine maintenance
6. Description of other reasons consistent with regulation 3.1 of MARPOL Annex VI

If the power reserve has been used, the ship should without delay notify its Administration or RO responsible for issuing the relevant certificate, as well as the competent authority of the relevant port of destination.

The information to be provided is shown in the [Appendix](#). The information should be accompanied by supporting evidence (e.g. weather condition reports) and records from the SHaPoLi/EPL system during the use of the power reserve for verification by the Administration or RO.

The above information must also be recorded on the record page of the OMM for SHaPoLi / EPL, signed by the master and kept on board. On an annual basis by 30 June, the Administration should report to the IMO Secretariat uses of a power reserve over a 12-month period from 1 January to 31 December for the preceding calendar year using the format as set out in the [Appendix](#).

OVERRIDE IS ACTIVATED, POWER RESERVE NOT USED

Where an EPL or SHaPoLi override is activated but the power reserve is not subsequently used, this event should be recorded in the bridge and engine-room logbooks. The engine-room logbook should record power used during the period when the override was activated. The EPL/SHaPoLi should be reset as soon as possible, and details of the reset should also be recorded in the bridge and engine-room logbooks. The Administration or RO should confirm reactivation of the EPL or SHaPoLi following the same procedure as when the power reserve is used.

The U.S. Coast Guard issued [USCG Policy Letter 01-24](#) regarding the use of devices that alter the maneuvering characteristics of ships to ensure safe navigation in U.S. waters. Ships that employ an EPL/SHaPoLi must inform pilots of the engine response characteristics prior to entry into U.S. territorial waters and are required to comply with 33 CFR § 164.11(k). While transiting in U.S. restricted waters, it is required to follow the guidance and procedures to pre-emptively override the EPL/SHaPoLi when necessary for safe operations.

HOW TO REPORT

In case power reserve has been used or reactivated, an occasional survey/audit shall be carried out. This occasional survey/audit may be carried out by remote methods. Please contact your local ABS office or submit a request to report same at remotesurvey@eagle.org.

EPL/ SHaPoLi Overridden	Power Reserve used	Power Reserve not used
Recording ER/ Bridge Logbooks	X	X
Recording in OMM Record Page	X	
Notify Administration/RO	X	
Notify next port of call	X	
RO/ Administration confirm reactivation	X	X

SHORT-TERM EXCEEDANCES

During normal operation of a limited engine, there might be transitory periods and isolated spikes in the recorded output (e.g. fluctuation of load due to weather and sea conditions). [IMO Resolution MEPC.390\(81\) details](#) that the override of limitation is indicated by giving an alarm on the bridge, the ship's master or OICNW to manually reduce the power within the limit, data recording to commence automatically, in case of short-term unintentional exceedance of the power limit the system may inhibit the initiation of the exceedance alarm for up to a maximum of five minutes.

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APPENDIX

FORMAT FOR REPORTING OF EPL/SHAPOLI OVERRIDE ACTIVATION, USE OF A POWER RESERVE AND REACTIVATION OF EPL/SHAPOLI

Ship type:

IMO number:

DWT:

GT:

Maximum unlimited shaft/engine power(kW):

Limited shaft/engine power(kW):

Date (dd/mm/yyyy)	Time (UTC)	Position		Override activation/Reactivation	Reason for using the power reserve ¹	Beaufort Numbers ²	Wave Height ²	Ice Condition ²
		Longitudinal	Latitude					
..								

1 Reason for override (select at least one option)

- .1 operating in adverse weather.
- .2 operating in ice-infested waters.
- .3 participating in search and rescue operations.
- .4 avoidance of pirates
- .5 engine maintenance
- .6 description of other reasons consistent with regulation 3.1 of MARPOL Annex VI

2 Beaufort number and wave height or ice condition, as applicable, to be entered in case of using the power reserve under adverse weather condition.

Note: The below two items need to be recorded in the record page of the OMM for SHaPoLi / EPL, signed by the master, kept on board, and notify to the Administration or RO and port of call.

- a. Supporting evidence (e.g. expected weather condition) in case of using the power reserve for avoidance action.
- b. Records from the SHaPoLi/EPL system for the electronically controlled engine during the use of the power reserve.
