
ENGINEERING EVALUATION OF NON-ESSENTIAL EQUIPMENT AND FURNISHINGS (NEF)

1. Responsibility

The Director of Engineering is accountable for the implementation and the quality of the NEF process.

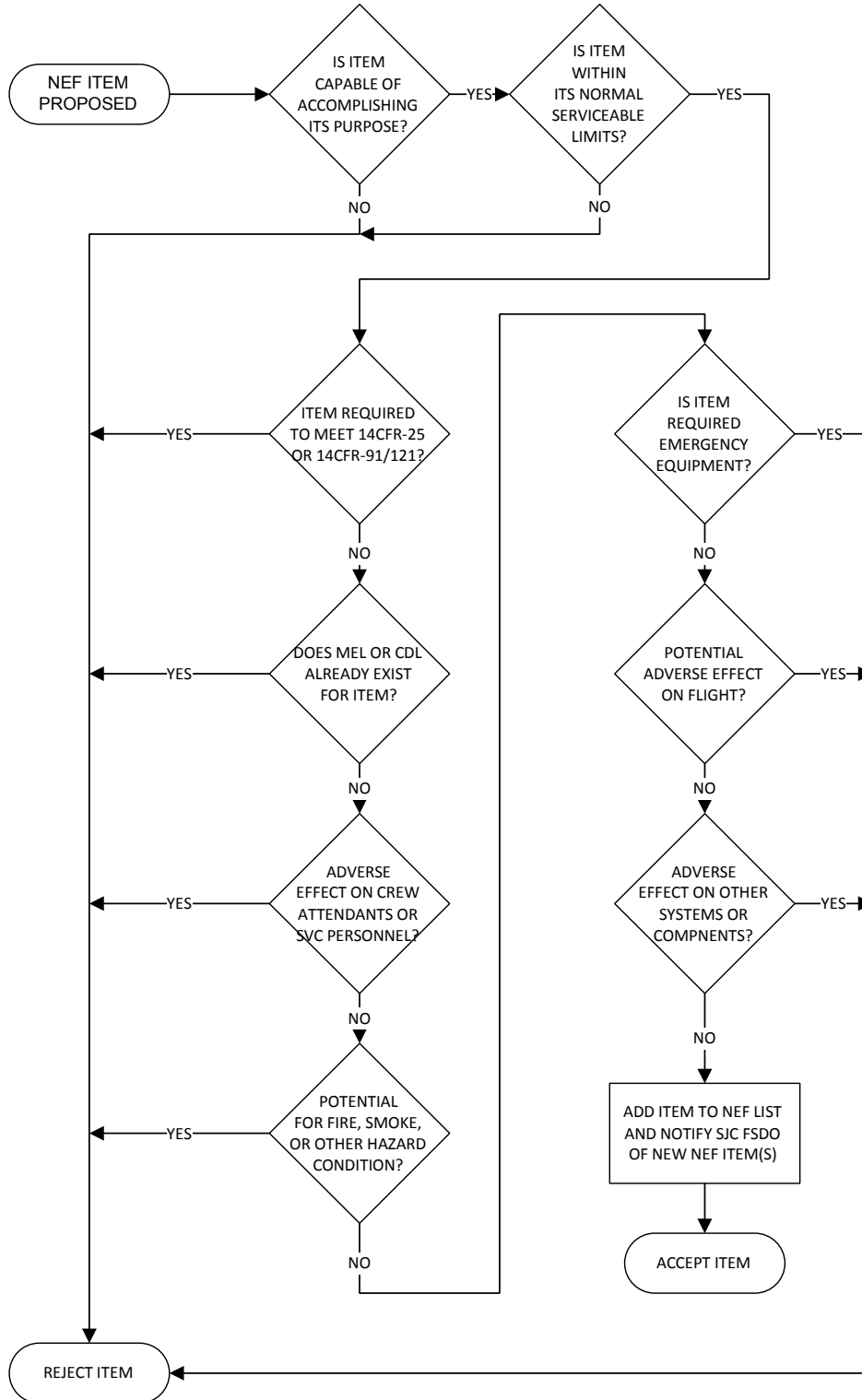
2. Authority

The Director of Engineering has the authority to establish and modify the NEF process.

3. Flowchart

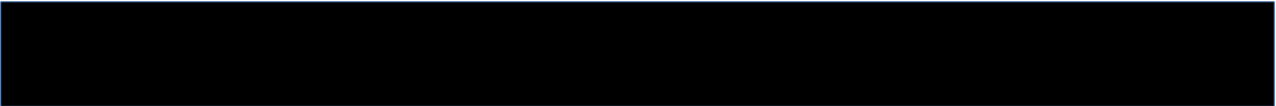
The flowcharts that follow provide an overview of the NEF Evaluation process.

NEF ITEM EVALUATION AND ACCEPTANCE



4. Details

This section of the Alaska Airlines Non-Essential Equipment and Furnishings (NEF) Program provides the detail of the engineering evaluation accomplished on proposed NEF items of relief. Items being considered for inclusion in the NEF program, or items undergoing revision, must be evaluated to ensure the item meets criteria set by FAA NEF Policy and Guidance.

- A. Items deferred using the NEF Checklist must be reported to the FAA (SJC-FSDO) by Alaska Airlines Engineering.
- B. Before being deemed eligible for inclusion in the approved NEF item list, proposed item(s) are required to be evaluated by Alaska Airlines Engineering:
- (1) 14CFR Requirements. Item must not be functionally required to meet certification rules (14CFR Part 25) or for compliance with operational rules (14CFR Parts 91 and 121).
 - (2) Serviceability of the item. The system and/or component in question must not be capable of accomplishing its intended purpose and/or be functioning normally within its approved operating limit(s) or tolerance(s).
 - (3) Eligibility for deferral. An existing MEL or CDL must not exist for the inoperative, damaged or missing item. If the item under consideration is a subcomponent of a primary system identified in an MEL or CDL, where no relief is authorized by the MMEL or AFM Appendix CDL, the subcomponent is not eligible for deferral under NEF.
 - (4) 
 - (5) Safety impact. The inoperative, damaged or missing item must not:
 - a) Have an adverse effect, or potential adverse effect, on the safe conduct of flight.
 - b) Adversely affect or jeopardize the safety of passengers, flight crew, flight attendants or service personnel.
 - c) Create the potential for fire/smoke or other hazardous condition.
 - d) Be required emergency equipment or be needed to accomplish emergency or irregular procedures.
 - (6) Relation of failure to other systems. The inoperative, damaged or missing item must not have an adverse effect on other required systems or components.
 - (7) Effect on crew workload. The inoperative, damaged or missing item must not create additional workload for the flight crew or flight attendants at critical times of flight or flight preparation.
 - (8) Additional Maintenance and Operational Procedures:
 - a) Maintenance, Flight Crew, Inflight, Station Operations procedures may be required depending on the deferred item and the impact it may have on the safe operation of the airplane.
 - Electrically operated NEF items are prime candidates for maintenance deactivation procedures. Anticipated failure modes and the underlying source of the failure must be considered when determining the need for deactivation procedures.
 - Procedures to remove or secure the NEF item must be developed if it may adversely affect or jeopardize the safety of passengers, flight crew, flight attendants or service personnel.

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- Certain cockpit items may require procedures in order to allow the flight crew to consider the impact of the deferred NEF item to ensure no adverse effect on the safe conduct of the intended flight.
 - For inoperative cabin, galley or lavatory NEF item, procedures may be necessary in order to minimize the impact to customer service.
 - Procedures may be required to provide alternate methods for accomplishing routine tasks (maintenance, onboard services, ramp services personnel).
- b) The MEL engineer will coordinate with stakeholders (line maintenance, flight operations, flight dispatch, inflight, guest services, engineering, etc.) to ensure procedures appropriate for the deferred item are developed.
 - c) NEF items requiring additional procedures will be covered by NEF items written specifically for those items.
- C. For proposed NEF items that are rejected, procedures must exist to clear NEF item that is applied to an airplane.
- D. Procedures
- A. Evaluation of newly applied NEF item(s).
 - 1) Newly requested NEF items will be reviewed by the MEL engineer.
 - 2) The MEL engineer will use form VA.TO. [REDACTED] to evaluate the proposed NEF item. This evaluative process considers:
 - a) 14CFR Requirements.
 - b) Serviceability of the item
 - c) Eligibility
 - d) Safety impact
 - e) Relation of failure to other systems
 - f) Effect on crew workload
 - g) Maintenance and operational procedures
 - 3) If the evaluation process accepts the requested NEF item, the NEF list will be revised to add the new item.
 - 4) If the evaluation process rejects the NEF item, procedures for "NEF Rejected Items" will be used.
- E. Communicating new NEF items to the FAA.
- The MEL Engineer will produce a report of new NEF items applied to airplanes and electronically submit it (or make available by other means) to the SJC FSDO each month.
- F. NEF items rejected by the FAA.
- a) MEL Engineer will discuss rejection with SJC FSDO as necessary to reach final determination that rejection is valid.
 - b) [REDACTED]

- c) The MEL Engineer will provide written notification of the rejected item and its deferral status to Maintenance Control and Quality Assurance.
 - If the rejected item has yet to be repaired (open deferral), Maintenance Control management will coordinate with appropriate organizations to ensure repairs are made within 24 hours after receiving notice from the MEL Engineer.
- d) To prevent re-occurrence, the rejected item will be added to the "DO NOT NEF Item List".

G. NEF items rejected by Engineering:

- a) The MEL Engineer will determine if the rejected item has been repaired or is still an open deferred item.
- b) The MEL Engineer will provide written notification of the rejected item and its deferral status to Maintenance Control and Quality Assurance.
 - If the rejected item has yet to be repaired (open deferral), Maintenance Control management will coordinate with appropriate organizations to ensure repairs are made within 24 hours after receiving notice from the MEL Engineer.
- c) To prevent re-occurrence, the rejected item will be added to the "DO NOT NEF Item List".

H. Evaluation of proposed NEF item(s)

<ol style="list-style-type: none"> 1. Gather the information required to determine if the proposed item is eligible for inclusion in the approved NEF item list: <ol style="list-style-type: none"> A. Determine that the item must not be functionally required to meet certification rules (14CFR Part 25) or for compliance with operational rules (14CFR Parts 91 and 121). B. Determine if the system and/or component in question is capable of accomplishing its intended purpose and/or be functioning normally within its approved operating limit(s) or tolerance(s). C. Verify that an existing MEL or CDL does not exist for the proposed item. D. Verify that the item is within its serviceable limits identified in the manufacturer's maintenance manual or the Alaska Airlines maintenance program, such as wear limits, fuel/hydraulic leak rates, oil consumption, etc. 	<p>Director of Engineering / Chief Engineer / MEL Engineer</p>
<ol style="list-style-type: none"> 2. Verify that the proposed NEF item: <ol style="list-style-type: none"> A. Does not have an adverse effect, or potential adverse effect, on the safe conduct of flight. B. Does not adversely affect or jeopardize the safety of passengers, flight crew, flight attendants or service personnel. C. Does not create the potential for fire/smoke or other hazardous condition. D. Is not required emergency equipment or would be needed to accomplish emergency or irregular procedures. 	<p>Director of Engineering / Chief Engineer / MEL Engineer</p>

<p>3. Determine that the proposed item does not have an adverse effect on other required systems or components.</p>	<p>Director of Engineering / Chief Engineer / MEL Engineer</p>
<p>4. Verify that the proposed item does not create additional workload for the flight crew or flight attendants at critical times of flight or flight preparation.</p>	<p>Director of Engineering / Chief Engineer / MEL Engineer</p>
<p>5. The Chief Engineer will use form VA.TO.GMM.034 to evaluate the proposed NEF item.</p>	<p>Chief Engineer</p>
<p>6. If the evaluation process accepts the requested NEF item, then</p> <ul style="list-style-type: none"> A. The NEF list is revised to add the new item. B. A report of new NEF item(s) applied to airplanes is produced and electronically submitted (or made available by other means) to the SJC FSDO each month. 	<p>Director of Engineering / Chief Engineer / MEL Engineer</p>
<p>7. If the evaluation process rejects the requested NEF item, then</p> <ul style="list-style-type: none"> A. The Chief Engineer will discuss rejection with SJC FSDO as necessary to reach final determination that rejection is valid. B. Immediately upon receipt of notification of valid rejected item by SJC FSDO, the Chief Engineer will determine if the rejected item has been repaired or is still an open deferred item. C. The Chief Engineer will provide written notification of the rejected item and its deferral status to Maintenance Control and Quality Assurance. D. To prevent re-occurrence, the rejected item will be added to the "DO NOT NEF Item List". 	<p>Chief Engineer</p>

5. Forms
None

6. Interfaces
None