

TITLE: Standard Application Procedure for Part 7 Motor Approvals, Extension of Approvals, and Subsequent Approvals

1.0 PURPOSE

The purpose of this Standard Application Procedure (SAP) is to explain the basic investigative process and outline the minimum document requirements necessary to initiate an investigation leading to the issuance of an Electric Motor Assembly Approval, Subsequent Approval, or Extension of Approval under 30 CFR Part 7.

2.0 SCOPE

This SAP applies to all applications for Electric Motor Assembly Approval, Subsequent Approval, or Extension of Approval under Part 7, Subpart J.

3.0 REFERENCES

This SAP refers to "Application Cancellation Policy", APOL1009.

4.0 DEFINITIONS

4.1. Approval- A document issued by MSHA which states that a product has met the requirements of this part and which authorizes an approval marking identifying the product as approved.

4.2. Extension Of Approval- A document issued by MSHA which states that the change to a product previously approved by MSHA under this part meets the requirements of this part and which authorizes the continued use of the approval marking after the appropriate extension number has been added.

4.3. Subsequent Approval - A product that is similar to one for which the applicant already holds an approval.

5.0 APPLICATION PROCEDURE

5.1. All applications must include the following information:

5.1.1. Application Letter - Each application letter for approval of a product should include a brief description of the product, and, if appropriate, a statement indicating whether, in the applicant's opinion, testing is required. If testing is not proposed, the applicant should explain the reasons for not testing. The application letter must be signed by the person responsible for answering any questions regarding the subject application. (Refer to Enclosures A, B, and C for completed samples.)

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- 5.1.2. Certified Statement(s), as required by Part 7. (Refer to Enclosure D.)
- 5.1.3. A checklist (Refer to Enclosure E). Submittal of this checklist to MSHA is optional.
- 5.1.4. One copy of all drawings, bills of materials, and specifications that include a composite drawing or drawings showing the details of the design and construction of the electric motor assembly per 30 CFR, Subpart J, Paragraph 7.303.

Note: Documents previously accepted by the Mine Safety and Health Administration need not be submitted, unless modified.

- 5.2. Upon receipt of the application package by the Approval and Certification Center, a fee estimate letter is prepared and sent to the applicant, unless the applicant has a blanket authorization on file. The fee estimate letter includes an estimate of the maximum anticipated fee to complete the investigation and a tentative starting date.
 - 5.2.1. An authorization response form is included with the fee estimate. The authorization response form indicates agreement to pay expenses up to the maximum estimated fee for the investigation or requests cancellation of the application. This form must be completed and returned by the applicant before any further action is taken on the application. If the form is not returned within thirty days from the date of the letter, the application is canceled.
 - 5.2.2. When unforeseen circumstances encountered during the investigation result in exceeding the estimated fee, the applicant is contacted (either by phone or email) and given the option of canceling the action or accepting the new estimated fee.
- 5.3. During the investigation, applicants are notified if MSHA elects to observe any product testing in accordance with Section 7.4(c), and of any discrepancies or additional information needed to process the application. Applicants are notified by mail and telephone. If an email address is provided, the discrepancy letter may be emailed.
- 5.4. After all the technical documents are evaluated and any changes required as a result of the viewing of any tests and inspection is finalized, the formal Approval, Subsequent Approval or Extension of Approval letter is issued.

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An invoice for the total cost of the investigation is sent after final approval issuance.

5.5. Submit the application to MSHA by one of the following methods:

5.5.1. Mail to: MSHA Approval and Certification Center
Attention: IPSO
RR #1, Box 251 Industrial Park Road
Triadelphia, WV 26059

5.5.2. FAX to: 304-547-2044

5.5.3. Electronically: For information and instructions on setting up an account with MSHA go to www.msha.gov .

5.6. Additional Information. Applicants may contact the Electrical Safety Division at 304-547-0400 for additional information concerning these procedures.

SAMPLE

PART 7 ELECTRIC MOTOR ASSEMBLY

APPROVAL APPLICATION LETTER

Chief, Approval and
Certification Center
RR #1, Box 251
Industrial Park Road
Triadelphia, WV 26059

Company and Address:
BB Electric Motors, Inc.
2 Starlake Avenue
Wheeling, WV 26003

Date: 02-01-2005

Subject: New Approval of the Frame 2XY521 125 hp, 400 to 4160
volt, 3 phase, 60 hertz, alternating current electric motor assembly
Company Application Code No.: 987654

Gentlemen:

We are requesting approval of the subject motor assembly built according to Composite Drawing 2B59010.

A brief description of the electric motor is as follows:

This motor is a fan-cooled motor rated at 125 hp, 400 through 4160 volts. We are asking for approval with a variety of cable glands to be able to meet customer's requests to cover a range of horsepower and voltages.

Explosion testing will be conducted on this motor.

Please advise us when an MSHA representative will be available to witness the tests.

Enclosed are all of the new or revised drawings and specifications pertinent to this application. If there are any questions, please contact Harriet W. Long at 304-232-9421.

Sincerely,

Harriet W. Long
President

(Enclosure A)

SAMPLE

PART 7 ELECTRIC MOTOR ASSEMBLY EXTENSION OF APPROVAL APPLICATION LETTER

Chief, Approval and
Certification Center
RR #1, Box 251
Industrial Park Road
Triadelphia, WV 26059

Company and Address:
BB Electric Motors, Inc.
2 Starlake Avenue
Wheeling, WV 26003

Date: 02-01-2005

Subject: Extension of Approval No. 7J-96021, Frame 250C, 125 hp,
400 to 4160 volt, 3 phase, 60 hertz, alternating current electric motor assembly
Company Application Code No.: 987655

Gentlemen:

We are requesting approval of the subject electric motor assembly built according to
Composite Drawing 2B2501C.

A brief description of the subject electric motor assembly is as follows:

The subject motor is similar to the motor approved under 7J-96021-0, Investigation No.
PS-15885 in that it is rated 125 hp, 400 through 4160 volts. The frame is identical;
however, the drive end plate has changed to accommodate a larger shaft. In addition,
the terminal box now accommodates two gland entries, with additional cable ranges
specified for the alternate glands.

Explosion testing of this electric motor is not necessary, based on the explosion testing
conducted and witnessed by an MSHA representative under Approval 7J-96021-0.

Enclosed are all of the new or revised drawings and specifications pertinent to this
application. If there are any questions, please contact Harriet W. Long at 304-232-9421.

Sincerely,

Harriet W. Long
President

(Enclosure B)

SAMPLE

PART 7 ELECTRIC MOTOR ASSEMBLY
SUBSEQUENT APPROVAL APPLICATION LETTER

Chief, Approval and
Certification Center
RR #1, Box 251
Industrial Park Road
Triadelphia, WV 26059

Company and Address:
BB Electric Motors, Inc.
2 Starlake Avenue
Wheeling, WV 26003

Date: 2-1-05

Subject: Subsequent Approval of Frame 253YZ, 125 hp, 400 to
4160 volt, 3 phase, 60 hertz, alternating current electric motor assembly

Company Application Code No.: 987656

Gentlemen:

We are requesting a subsequent approval of the subject motor assembly built according to Composite Drawing 2B2532Y.

The subject motor assembly is similar to the Frame 2XY521, 125 hp, 400 to 4160 volt, 3 phase, 60 hertz, alternating current motor, built according to Composite Drawing 2B59010, Approval No. 7J-96021-0, Investigation No. PS-15885, except as follows:

The motor is 562" long X 272" in diameter. The front end plate incorporates a terminal box, which is machined for two gland entrances.

Explosion testing of this motor is not necessary, based on the explosion testing conducted and witnessed by an MSHA representative under approval 7J-96021-0.

Enclosed are all of the new or revised drawings and specifications pertinent to this application. If there are any questions, please contact Harriet W. Long at 304-232-9421.

Sincerely,

Harriet W. Long
President

(Enclosure C)

PART 7 MOTOR ASSEMBLIES
CERTIFIED STATEMENTS

Company: _____ Date:

Address:

Subject:

Company Application Code No.:

I, _____, as the responsible company official, hereby certify that:

- (1) The subject motor assembly will have Quality Assurance functions performed as specified in Title 30 Code of Federal Regulations 30 CFR Part 7, Subpart A (7.7).
- (2) The subject motor assembly has been designed to meet or exceed the design portion of the technical requirements set forth in 30 CFR Part 7, Subpart J (7.304).
- (3) The subject motor assembly has been tested and meets the performance criteria of the explosion tests set forth in 30 CFR Part 7, Subpart J (7.306). (If applicable)
- (4) The subject motor assembly has been tested and meets the performance criteria of the static pressure tests set forth in 30 CFR Part 7, Subpart J (7.307). (If applicable)
- (5) The subject motor assembly has been tested and meets the performance criteria of the lockwasher equivalency tests set forth in 30 CFR Part 7, Subpart J (7.308). (If applicable)
- (6) The proposed change cited in the application is the only change that affects the technical requirements (for subsequent and extensions of approval only)(30 CFR, Part 7, Subpart J, Section 7.3(f)). (If applicable)

(Enclosure D)

APPROVAL/SUBSEQUENT APPROVAL/EXTENSION OF APPROVAL
FOR PART 7 MOTOR ASSEMBLIES

This checklist is designed for the convenience of the applicant. Using this checklist will ensure that the drawings and specifications submitted to MSHA are complete and that all the technical data necessary for approval have been provided. Submittal of this checklist to MSHA is optional.

Complete all of the following by adding a check mark or N/A on the lines provided. The check mark signifies the item has been positively addressed. The N/A signifies the item is not applicable to the design of the component.

Administrative

- _____ 1. The approval/subsequent approval or extension of approval application letter is enclosed.
- _____ 2. All correspondence, specifications, and lettering on documents are in English and are legible.
- _____ 3. All documents are titled, numbered, dated, include the company name, and show the latest revision level. If multiple pages are submitted, this information is on each page.
- _____ 4. There are no pencil or ink notations, or correction fluid (white-out) on the drawings and bills of material.
- _____ 5. A certified statement is included that specifies that the motor assembly will have Quality Assurance functions performed as specified in 30 CFR, Part 7, Subpart A (Section 7.7).
- _____ 6. A certified statement is included that specifies that the subject motor assembly has been designed to meet the design portion of the technical requirements set forth in 30 CFR, Part 7, Subpart J (Section 7.304).
- _____ 7. A certified statement is included that specifies that the subject motor assembly has been tested and meets the performance criteria of the explosion tests set forth in 30 CFR, Part 7, Subpart J (Section 7.306), and the static pressure tests set forth in 30 CFR, Part 7, Subpart J (Section 7.307).

- _____ 8. A certified statement is included that specifies that the lockwasher equivalency tests have been conducted and meet the performance criteria set forth in 30 CFR, Part 7, Subpart J (Section 7.308).

Technical

- _____ 9. The composite drawing(s) includes the following:
- _____ a. Model (type), frame size and rating of the motor (Section 7.303 (a) (1)).
 - _____ b. The overall dimensions of the motor (Section 7.303 (a) (2)).
 - _____ c. The internal free volume of the motor (Section 7.303 (a) (2)).
 - _____ d. The approval plate design, material, location, and method of attachment (Section 7.309).
 - _____ e. A general tolerance chart (Section 7.303(a) (4)).
 - _____ f. The type and grade of material used to manufacture the motor (Section 7.303 (a).(3)).
 - _____ g. The size and type of welds, and a note that "Welds are continuous gas tight and made in accordance with American Welding Society Standards AWS D14.4-77" (Section 7.304 (g) (2)) OR meets the test requirements set forth in Section 7.307.
 - _____ h. The thickness of all walls that form the enclosure (Section 7.304 (g) (19), Table J-2).
 - _____ i. The minimum thickness (after machining) of the cover and flanges (Section 7.304 (g) (19), Table J-2).
 - _____ j. Surface finish of all flame arresting path surfaces (Section 7.304 (g) (5)).
 - _____ k. The distance from the interior of the enclosure to the edge of any fastening hole or sufficient dimensions to calculate the distance (Section 7.304 (g) (19), Table J-2).
 - _____ l. The size and grade of bolts that secure parts forming a flame-arresting path fit (Section 7.304 (g) (8)).

- _____ m. The maximum bolt spacing for joints all in one plane does not exceed 6", with a minimum of four bolts.
- _____ n. The maximum bolt spacing for joints in different planes does not exceed 8", with a minimum of four bolts.
- _____ o. If fastening diameters are smaller than required in Table J-2, they meet the test requirements of 30 CFR 7.307 and 7.306, in that order.
- _____ p. The machining of the holes for bolts that secure parts forming flame arresting path fits (Section 7.304 (g) (19), Table J-2).
- _____ q. Lockwashers for all bolts maintaining flame-arresting path fits, including the size, thickness, and material of the lockwashers. If an alternate locking device is used, it meets the requirements of 7.308 and is used in the configuration in which it was tested (Section 7.304 (g) (7)) and Section (7.308).
- _____ r. Sufficient dimensions to calculate minimum thread engagement for bolts that secure a flame-arresting path fit (Section 7.304 (g) (19), Table J-2). If minimum thread engagement is less than required, (equal to or greater than the diameter of the bolt), the assembly meets the test requirements of 30 CFR, Section 7.307 and 7.306, in that order.
- _____ s. Sufficient dimensions to determine that bolts, which secure flame-arresting paths, will not bottom in tapped holes if lockwashers or equivalent locking devices are omitted (Section 7.304 (g) (9)).
- _____ t. The planarity between bolt holes for any portion of a flame-arresting path that makes up a plane fit, i.e., cover/flange, bracket/frame (Section 7.304 (g) (5)).
- _____ u. Burrs or projections are removed from threaded holes for fastening bolts on the flame arresting path surfaces (Section 7.304 (g) (19), Table J-2).
- _____ v. The nominal length with tolerances for each flame-arresting path, or sufficient dimensions to calculate the flame arresting path length (Section 7.304 (g) (19), Table J-2).

- _____ w. A note that "All castings shall be free of blowholes" if a casting is used (Section 7.304 (g) (1) (iii)).
- _____ x. The size, grade, and thread length of studs if used in lieu of cover bolts and the method of securing the studs (Section 7.304 (g) (19), Table J-2).
- _____ y. The class of threads for threaded joints and the method of securing the threaded fit (Section 7.304 (g) (4) & Section 7.304 (g) (18)).
- _____ z. The location and width of O-ring grooves (Section 7.304 (g) (16)).
- _____ aa. The notation "1/8" minimum of stock is left at the center of the bottom of all blind holes" Section 7.304 (g) (13)).
- _____ 10. The composite drawing specifies, "Under normal operating conditions, the external surfaces of the motor will not exceed 150 degrees C" (Section 7.304(b)).
- _____ 11. The composite drawing specifies, "The motor is designed to withstand an internal pressure of 150 PSI" (Section 7.304 (g) (1) (ii)).
- _____ 12. The composite drawing specifies, "The internal components are in accordance with 30 CFR Sections 7.304 (c) and 7.304 (I) (1)" that addresses the electrical clearances between live parts and casings and combustible gases from insulating materials, respectively (Sections 7.304 (c) and 7.304 (I) (1)).
- _____ 13. If coil thread inserts are used, the following is specified:
 - _____ a. Inserts have internal screw threads (Section 7.304 (g) (12) (I)).
 - _____ b. Holes for inserts are drilled & tapped and installed according to the insert manufacturer's specifications (Section 7.304 (g) (12) (ii) & (iii)).
 - _____ c. Inserts shall be of sufficient length to ensure minimum thread engagement of fastening as specified in paragraph 7.304 (g) (19). (Section 7.304 (g) (12) (iv)).

- _____ 14. For gland assemblies, the drawings provide the following information:
- _____ a. The compressed packing material/grommet shall be in contact with the cable jacket for 2" minimum (Section 7.304 (h) (4)).
 - _____ b. The packing nut has at least 1/8" or more to travel before meeting interference by parts other than packing (Section 7.304 (h) (2) (I)).
 - _____ c. The size and type of material of the packing: asbestos, an MSHA-accepted asbestos substitute, or a flame-resistant grommet (Section 7.304 (h) (5) (I)).
 - _____ d. The packing nut and stuffing box are secured against loosening (Section 7.304 (h) (3)).
 - _____ e. If a gland plug is used, it is secured by spot welding or brazing (Section 7.304 (g) (15)).
 - _____ f. All sharp edges that may damage cable jackets are removed from gland parts (Section 7.304 (h) (1)).
 - _____ g. The packing nut has a minimum of three effective threads engaged (Section 7.304 (h) (2) (ii)).
- _____ 15. The terminal or connection box volume is specified if it is isolated from the volume of the winding compartment by sealing compound or terminal plate (Section 7.303 (a) (2)).
- _____ 16. The isolating barrier material used in the opening between the terminal box and the winding compartment is identified (Section 7.306 (c) (4)).
- _____ 17. A note indicating that for a laminated stator frame, it shall be impossible to insert a .0015" thickness gage to a depth exceeding 1/8" between adjacent laminations or between end rings and laminations" (Section 7.304 (g)(6)).
- _____ 18. The drawing specifies that plugs, including eyebolts, used in through holes where future access is desired shall meet the flame-arresting paths, lengths, and clearances of Section 7.304 (g) (19) and be secured by spot welding or brazing. The spot weld or braze may be on a plug, clamp, or fastening. Plugs for holes where future access is not desired are specified as being secured all around by a continuous gas tight weld (Section 7.304 (g) (15)).

- _____ 19. The drawing(s) specifies that the distance from the edge of the pole piece to any bolt hole in the frame is not less than 1/8" (Section 7.304 (g) (11)).
- _____ 20. The drawing(s) specifies that if the distance from the edge of the pole piece to any bolt hole in the frame is 1/8" to 1/4", the diametrical clearance for the pole bolt does not exceed 1/64" for not less than 2" through the frame (Section 7.304 (g) (11)).
- _____ 21. The drawing(s) specifies that the pole piece has the same radius as the inner surface of the frame (Section 7.304 (g) (11)).
- _____ 22. If an aluminum alloy fan is being used, the drawing(s) specifies that the magnesium content does not exceed 0.6% (Section 7.304 (g) (3)).
- _____ 23. The drawing(s) specifies that non-metallic parts are provided with a means to prevent an accumulation of static electricity (Section 7.304 (g) (3)).
- _____ 24. For a motor incorporating a conduit box that is isolated from the winding compartment that exceeds 110 psi during testing, the drawing(s) specifies that the motor has a warning statement or plate on it, stating that the isolating barrier must be maintained to ensure explosion-proof integrity of the motor (Section 7.306 (d)).