

NEMA Premium™ Motor Efficiency Specifications

Nominal Full-load Efficiencies for 1-200 horsepower NEMA design A and B, three phase, integral horsepower, general purpose motors (1200, 1800, 3600 RPM).

| Open Drip-Proof (ODP) | | | | Totally Enclosed Fan-Cooled (TEFC) | | | |
|-----------------------|-----------|-----------|-----------|------------------------------------|-----------|-----------|-----------|
| Horsepower | 1200 RPMs | 1800 RPMs | 3600 RPMs | Horsepower | 1200 RPMs | 1800 RPMs | 3600 RPMs |
| 1 | 82.5 | 85.5 | 77 | 1 | 82.5 | 85.5 | 77 |
| 1.5 | 86.5 | 86.5 | 84 | 1.5 | 87.5 | 86.5 | 84 |
| 2 | 87.5 | 86.5 | 85.5 | 2 | 88.5 | 86.5 | 85.5 |
| 3 | 88.5 | 89.5 | 85.5 | 3 | 89.5 | 89.5 | 86.5 |
| 5 | 89.5 | 89.5 | 86.5 | 5 | 89.5 | 89.5 | 88.5 |
| 7.5 | 90.2 | 91 | 88.5 | 7.5 | 91 | 91.7 | 89.5 |
| 10 | 91.7 | 91.7 | 89.5 | 10 | 91 | 91.7 | 90.2 |
| 15 | 91.7 | 93 | 90.2 | 15 | 91.7 | 92.4 | 91 |
| 20 | 92.4 | 93 | 91 | 20 | 91.7 | 93 | 91 |
| 25 | 93 | 93.6 | 91.7 | 25 | 93 | 93.6 | 91.7 |
| 30 | 93.6 | 94.1 | 91.7 | 30 | 93 | 93.6 | 91.7 |
| 40 | 94.1 | 94.1 | 92.4 | 40 | 94.1 | 94.1 | 92.4 |
| 50 | 94.1 | 94.5 | 93 | 50 | 94.1 | 94.5 | 93 |
| 60 | 94.5 | 95 | 93.6 | 60 | 94.5 | 95 | 93.6 |
| 75 | 94.5 | 95 | 93.6 | 75 | 94.5 | 95.4 | 93.6 |
| 100 | 95 | 95.4 | 93.6 | 100 | 95 | 95.4 | 94.1 |
| 125 | 95 | 95.4 | 94.1 | 125 | 95 | 95.4 | 95 |
| 150 | 95.4 | 95.8 | 94.1 | 150 | 95.8 | 95.8 | 95 |
| 200 | 95.4 | 95.8 | 95 | 200 | 95.8 | 96.2 | 95.4 |

As a member of the Consortium for Energy Efficiency (CEE), Southern California Edison endorses the NEMA Premium™ specifications. These efficiency levels were developed by CEE and the National Electrical Manufacturers Association (NEMA).

For More Information, Contact:

Southern California Edison Representative: (800) 736-4777

California Association of Health Facilities: (916) 441-6400

ENERGY STAR: www.energystar.gov

CEE's Premium-Efficiency Motors Initiative:

www.cee1.org/ind/motrs/motrs-main.php3



Motor Decisions Matter Campaign: www.motorsmatter.org

DOE's BestPractices Clearinghouse: (800) 862-2086

www.oit.doe.gov/bestpractices/motors/

NEMA Premium™: (703) 841-3274

www.nema.org/premiummotors

SAVING MONEY WITH MOTORS

in Skilled Nursing Care Facilities

Paying Too Much for Electricity These Days?

Installing high-efficiency equipment can trim 8 percent off a skilled nursing care facility's monthly utility bill, saving \$11,000 per year. Many of the energy-saving opportunities are related to facility heating, ventilation and air conditioning equipment—and the motors that drive them.

This brochure explains how nursing home managers can cut electric bills by choosing more efficient motor-driven equipment. Below are some specific steps you can take today to achieve similar savings:

- Ask for NEMA Premium™ efficiency motors the next time you buy (or repair) an air handler, compressor or other motor-driven equipment.
- Plan ahead by establishing a policy to only buy energy-efficient equipment, such as those qualifying for the ENERGY STAR® program.
- Ask your SCE account representative whether it makes sense to replace inefficient equipment (or their motors) before they fail.

An Educational Publication for the Skilled Nursing Care Industry
brought to you by Southern California Edison



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Skilled Nursing Care Facilities are Important to California

Skilled nursing care facilities (“nursing homes”) serve the fastest growing segment of our population—the elderly. The population of Americans 65 and older has tripled since 1900 and is expected to comprise 20 percent of the total U.S. population by 2050. Many of these older Americans will require continuous nursing care in the future.

Southern California Edison supplies power to more than 210 skilled nursing care facilities. These businesses not only provide essential services for California’s elderly, they are also important to the region’s economy, employing 12,000 and generating \$50 million in annual sales. Nine large companies own multiple nursing homes in Southern California including two of the largest nursing facility chains in the country, Beverly Enterprises and Covenant Care California. While the market is growing, escalating energy prices can be a real challenge as the average nursing home spends more than \$55,000 annually on electricity.

Cash in on Motor Savings Opportunities

Believe it or not, nursing homes buy a lot of motors. Usually, they are part of larger heating and cooling equipment, such as air handlers, compressors and air conditioners. Unfortunately, these motors often use more electricity because they are not required to meet federal minimum energy-efficiency standards. Nursing home managers can help minimize their monthly utility bills by insisting on NEMA Premium™ efficiency motors whenever larger equipment is repaired or when they buy new equipment. They should also make sure smaller equipment, such as appliances, qualify for the ENERGY STAR label.



Where the Savings Are

Large Chillers: Replacing motors with premium-efficiency models in large central air conditioning is one of the best opportunities to improve efficiency in nursing homes. For example, replacing a 10-horsepower compressor motor with a premium-efficiency motor yields an internal rate of return of 33 percent and a net present value of \$162.¹ The payback period is just three years.²

Smaller fan and pump motors used in central heating and cooling systems should also be considered since, together, they are likely to use as much power as compressor motors.

Rooftop Ventilation: Rooftop ventilation is another promising opportunity for motor efficiency. For instance, replacing a failed 3 horsepower motor in an air handling unit with a premium-efficiency motor yields a 54 percent internal rate of return and a net present value of 54 percent. The payback period is two years.

Room Air Conditioning: Instead of having central heating and cooling systems, many nursing homes rely heavily on “through-the-wall” room units. Look for the ENERGY STAR label whenever you purchase these products.

Ice Machines: Typically ice machines have capacitor start, induction run reciprocating compressors. Replacing these motors with capacitor start, capacitor run compressors increases efficiency by 5-10 percent, which pays back the added investment in two years or less.

Making Energy Efficiency a Priority in Procurement

How to specify a premium-efficiency motor

When buying a number of small HVAC units (or other motor-driven pieces of equipment) for a new construction or major renovation project, nursing home managers should specify NEMA Premium™ efficiency motors as part of a directive to obtain the most efficient models. The specifications for NEMA Premium™ motors can be found below.

¹ Calculated as the discounted present value of the savings (\$369) minus the cost of the incremental up-front investment (\$208), using a 10 percent discount rate.

² This payback period is computed as the \$208 cost of the added investment divided by the annual savings of \$71 based on a 10 hp motor running 2,500 hours per year at \$0.06 per kWh over 10 years at a 10 percent discount rate.

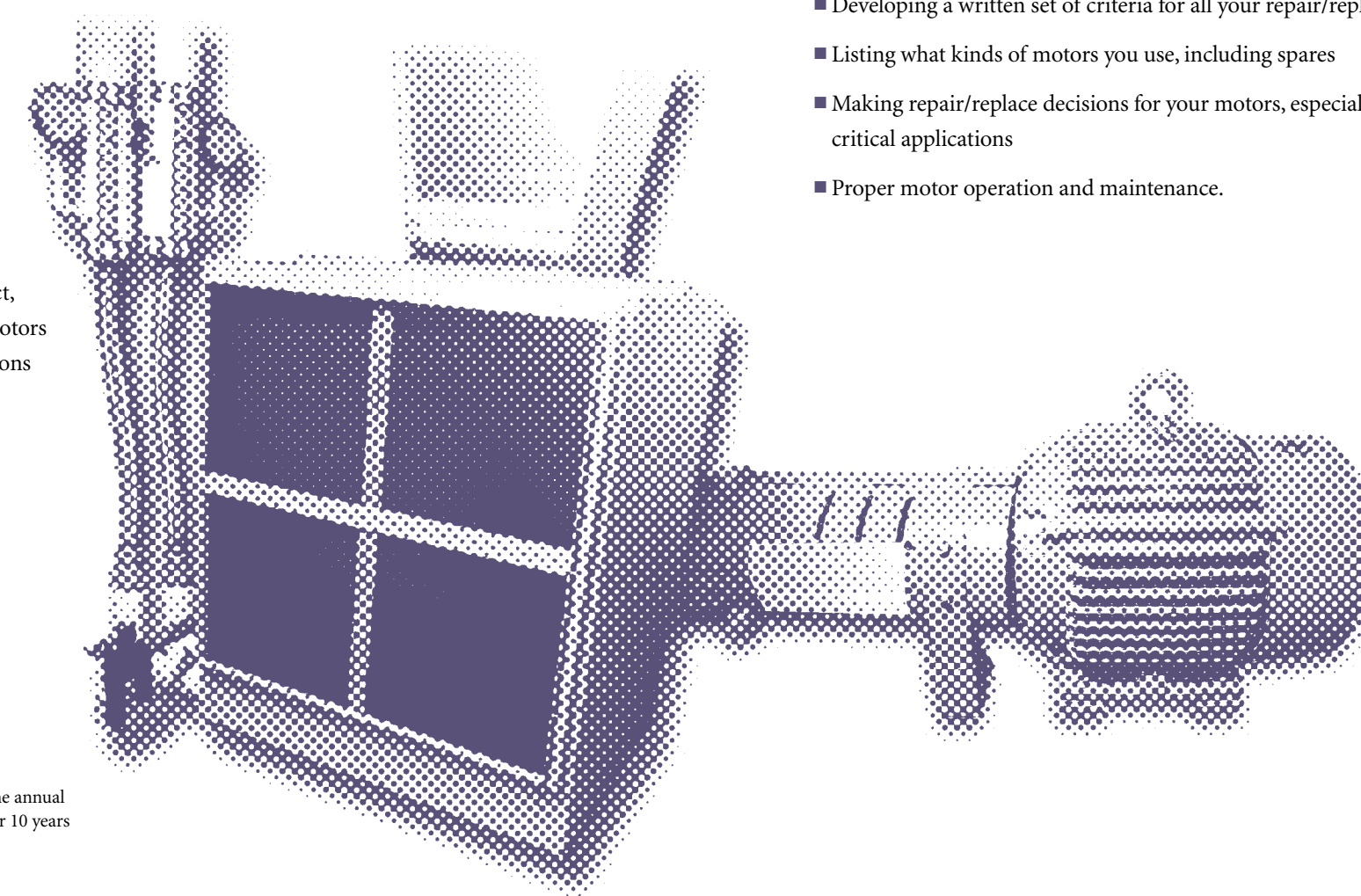
Be Prepared for Motor Failure by Having a Motor Management Plan

There is never a good time for a motor to fail. But they do fail and when one does, you want to solve the problem as quickly and effectively as possible. The results of panic decision-making, however, can be high, resulting in increased operational costs, poor equipment performance and unreliable service. By planning ahead, you can avoid hasty decisions and minimize equipment downtime. The first step is to develop a motor management plan that allows you to make the best decision—before the motor fails.

To prepare for motor failure, call your Southern California Edison account representative today and inquire about developing a motor management plan for your facility.

Ask about:

- Developing a written set of criteria for all your repair/replace decisions
- Listing what kinds of motors you use, including spares
- Making repair/replace decisions for your motors, especially those in critical applications
- Proper motor operation and maintenance.



Energy Efficiency Case Study

According to a national study of 26 nursing homes, energy costs can be cut by 8 percent through higher-efficiency equipment, such as lighting and motors, saving more than \$11,000 per year in energy costs. This translates into a 3.5-year payback. The largest single area of potential energy savings is in improved heating, ventilation and air conditioning (HVAC) systems. Upgrading just the HVAC systems in 11 of these nursing homes yielded an average annual savings of \$5,685—with average payback periods of five years.