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Second Public Hearing on HB 2005 A before the

Oregon State Senate Committee on Environment and Natural Resources

Room HR C

Good afternoon Chairman Jackie Dingfelder, Vice Chair Alan Olsen, and members of the Oregon Senate Committee on Environment and Natural Resources, thank you for holding this public hearing on HB 2005 A.

My name is Stan Danielson, Business Manager for the Heat & Frost Insulators Local 36. I started my four year apprentice program in 1969; I have nearly 44 years of experience in the Mechanical Insulation Industry. I have been the Business manager for Local 36 over 27 years. I appreciate the opportunity to testify and share with the Committee the contributions that our union and our union contractors are making to advance energy efficiency. This creates and maintains good jobs in Oregon, and reduces **carbon emissions.**

Mechanical insulation is a proven technology that reduces energy costs for commercial and industrial facilities for both new construction and retrofit maintenance. Mechanical insulation also creates immediate jobs for our insulation suppliers, contractors and our **skilled craftsmen** who install Mechanical insulation.

Additional benefits include: a significant return on investment, and the reduction of life cycle costs. This **improves sustainable efficiency**, worker safety from contact from hot/cold surfaces, reduces condensation and mold prevention, and improves air quality.

Buildings are responsible for **40%** of U.S. energy demand and **40%** of all greenhouse gas emissions, making efficiency gains in this area crucial if we are to reduce America's energy consumption and reduce carbon emissions. The **industrial sector** will also benefit in energy efficiency **opportunities**. At the **residential** level, insulation is well known for its benefits. However, the same cannot be said in the commercial and industrial sectors, which together consume **2½ times** more energy than homes. Commercial and industrial insulation—collectively known as mechanical insulation—can slash the energy demand for the building and industrial sector.

I want to thank House Speaker Kotek for introducing HB 2005 A.

We are very appreciative of her leadership to **create green energy jobs in Oregon,** and make our state industrial sector more energy-efficient and cost-competitive.

Our state has a long record of energy and **environmental stewardship** which also applies to our state energy codes. I am very pleased that Oregon is ahead of many states with the implementation of updated energy codes for new construction.

However, we believe there are many **opportunities** for additional energy efficiencies with mechanical insulation. I would like to share with the committee some areas where we **can and should** make improvements.

The codes for mechanical insulation is only a first step. Many State and municipal energy officials think that because they have the code in place, their work is done, but we need to make sure that there

is **effective** enforcement to ensure that new construction includes the recommended levels of insulation.

Unfortunately, we know from experience that the code standards for insulation are not always followed because many building contractors utilize **"value engineering"** to reduce the initial building construction costs. Often, mechanical insulation is reduced as a result of **value engineering,** and that means **the thickness** of the material is reduced or insulation is eliminated as a **"non-essential" system**. The building will function with or without the recommended levels of mechanical insulation, but the initial savings to cut mechanical insulation will be offset by increased energy costs to heat and cool the building.

Another area for energy efficiency improvement is maintenance work. The U.S. Department of Energy estimates that between 10 - 30% of mechanical insulation, that should be in place, is missing or damaged to the point **it is useless**. The **average hospital has over 13 miles of insulated pipe and 4 acres of insulated duct**, and then we **could** have as much as a **mile of pipe and almost a half-acre** of insulated duct that needs repair and/or

replacing. The industrial sector is not much better at maintenance than the commercial sector.

Q **Why don't they maintain the insulation?** Again, just **as** with new construction, the building will function with or without the insulation, but there are **added costs and added carbon emissions**.

Based on data from more than 700 industrial energy assessments, it is estimated that the implementation of a **comprehensive mechanical insulation maintenance** and upgrade program **nationally**, would generate **$4.8 billion** in **energy savings**, reduce **43 million metric tons of carbon dioxide** and other greenhouse gas emissions, and create and sustain **89,000 jobs annually.**

Best of all, these jobs do not require additional research and development. Mechanical insulation opportunities can be easily identified, with potential energy savings and emissions reduction determined with proven DOE-utilized software technologies.

For facility owners and operators, the **savings are swift** and sustainable; the return on investment from mechanical insulation is typically less than **two years (and sometimes as little as six months).**

The most cost-effective and cleanest energy source in Oregon and throughout the country **is the energy that is conserved**. On behalf of the members of Insulator Union Local 36 and our union contractors, we are very proud of our **100-year tradition** of work and **contributions** to energy efficiency, and are very pleased to extend an invitation for you to visit our apprenticeship and training facilities where we can show you how we train the next generation of skilled craft professionals.

Thank you again for holding this important public hearing to **increase awareness of the value of mechanical insulation**, and I will be happy to answer any questions.