LUKOIL
Oil Company

Limited Liability Company
"Lukoil-KaliningradMorNeft"

No. 6-2/2935
Date: 07/15/03

" Approved "

Chief Engineer

_____ M.A. Sobolev

S T A T E M E N T
On the results of the ultrasound device UL101 use

Board of experts, comprising Chief Plant Engineer Mr. J.G.Mandrugin, Engineer of Plant Engineer Department Mr. V.K.Zhitin, and Superintendent of Power Supply shop Mr. A.D.Baboshkin, had analyzed the results of use of device UL101 (manufacturer – CTRL Systems, Inc., USA) at the objects of Company (gas-filling station, metalware plant, transformer substation) and concluded the following:

1. The device UL101 was used at the gas-filling station and metalware plant in the process of their operation for the sake of location and pinpointing a leak of different gases (nitrogen, air, methane-butane) from pressurized vessels, receivers, pipes, gas units and fittings. The distance of leak location constituted a few tens of meters, and the accuracy of leak pinpointing didn't exceed a few millimeters. It had enabled the high quickness and trustworthiness in finding any defects with consequent leaks thru either fixed or detachable joints, which joints were situated at indoors or outdoors though those places were inaccessible.

2. Regarding the equipment of transformer substations under operation, the device UL101 was used for finding different malfunctions and breakages in electric contacts and insulation that are being accompanied by sparking, arc and corona discharge. The disclosure of those defects had been fulfilling remotely (without approaching an operator to the zones with dangerous apparatus) and at the equipment being under operation (i.e. at the equipment not being shut down). The presence of those defects was verified by the results of the next trials and inspections.

3. Included into the kit of UL101 the complete of attachments gives the evident possibility to adapt quickly this device for finding the variety of defects. The simplicity of setting and control, small mass and dimensions, low power consumption from one 9-Volt standard battery, deliver altogether the simpleness and ergonomic advantages for putting the device UL101 in practice. According to its principle of design the device UL101 is an indicator of ultrasound, and therefore it doesn't require expenses for its apt checking and calibration that enhance additionally its efficiency.

4. Implemented by the device UL101 is the ultrasound technology that gives the qualitatively new possibilities for early, quick and cheap disclosure of mentioned above potentially dangerous defects at the initial stages of their occurrence and development. In accordance with the criterion "Cost-Benefit"

this device sufficiently surpasses the modern technologies that are being used for finding the similar defects. This substantiates the reason and availability for versatile applying of this device UL101 at various objects of Fuel and Energy Complex.

Chief Plant Engineer **Signature** Mr. J.G.Mandrugin

Engineer of Plant Engineer Department **Signature** Mr. V.K.Zhitin

Superintendent of Power Supply shop **Signature** Mr. A.D.Baboshkin