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Title: Method for determining e.g. horizontal deflection turbine foundation to support steam turbine-generator, involves comparing detected position with predetermined position feature to determine foundation deflection at target location

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Abstract: NOVELTY - The method involves positioning a target (224) above a surface a foundation. The target is located at a location on the foundation, and is provided with a target feature (250X, 250Y). Laser beam (220) electromagnetic radiation is directed above the surface the foundation to be monitored. Position target feature the target is detected relative to a position the beam the electromagnetic radiation. The detected position is compared with the predetermined position the target feature to determine deflection the foundation at the location the target.

USE - Method for determining deflection e.g. vertical and/or horizontal deflection, equipment foundation e.g. large steel reinforced concrete foundation and turbine foundation, to support a large equipment e.g. large steam turbine-generator. Can also be used for turbines, motors, engines, transmissions, machines, machine tools, bridges and buildings.

ADVANTAGE - The target is uniquely matched to a foundation plate, so that the variability due to the target used with each foundation plate is minimized or eliminated, and the accuracy and repeatability the measured deflections are enhanced. The steam turbines include stationary and rotating components that are precisely aligned with respect to each other in order to ensure proper operation and to prevent the rotating components from rubbing against the stationary components.

DETAILED DESCRIPTION - The electromagnetic radiation is microwaves, terahertz waves, infrared light, visible light, UV light, x-rays, gamma rays, and radio waves. The target feature comprises a centerline the circular bore. The target comprises a circular bore. An INDEPENDENT CLAIM is also included for an apparatus for determining deflection an equipment foundation comprising an electromagnetic radiation source.

DESCRIPTION DRAWING(S) - The drawing shows a perspective view a target and laser detector.

Laser beam (220)

Target (224)

Target adapter (240)

Laser sensor (242)

Target feature (250X, 250Y)

Drawing:

Derwent Class Code(s): S02 (Engineering Instrumentation, ing equipment, general testing methods)

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