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NDT Training, Certification and Knowledge Management – A Holistic Approach

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Abstract

The importance of Training and Certification in the field of NDT is too well known to need repetition. An aspect, not that well recognized however, is the need for continued knowledge management of the Trained and Certified NDT Personnel, so that the investments made yield desired results. NDT is a fast-changing field and knowledge up-gradation is an important task. Knowledge of similar work done somewhere else, or for that matter, even in the same organization some years ago by other colleagues, is a valuable input, often ignored due to difficult access.

ISNT has taken a number of steps to strengthen the Training and Certification of NDT personnel in the country (and in some cases even of personnel overseas). ISNT also takes care of the needs for knowledge up-gradation of the practicing NDT personnel, through 'Journal of Non-Destructive Evaluation'. Journals, textbooks, handbooks, Proceedings of National Seminars, Workshops etc., are valuable in knowledge management in a general way, but do not and by their very nature cannot address the specific needs of organization. The organization is thus required to provide specific procedures, handbooks, etc.

As of now, these different resources are independent of each other with little or no integration. The need for an integrated holistic approach for Training, Certification and Knowledge Management is thus acutely felt, especially in large organizations, where job rotation and attrition of personnel due to resignation, retirement etc., brings new people to the old jobs. The need for capturing the knowledge and expertise gained by personnel over a period for the benefit of newcomers (to the job) also exists.

This paper discusses in detail a holistic approach at developing a software for knowledge base management system, which integrates NDT Tutor, NDT Examiner and NDT Expert. NDT Tutor provides multi-media lessons to NDT personnel, who need to learn or refresh their NDT knowledge. It allows for self-paced, interactive learning environment, simulated practical tests, model tests etc. NDT Examiner addresses the same need but from the point of view of a Faculty Member or Examiner. It allows development of a suitable timetable, model test papers and test papers for actual examination (with security protection to prevent unauthorized access). Integration of the PC with the software with PC-based or PC-communicating Digital NDT Equipment like Ultrasonic Flaw Detectors, Eddy Current Testing Equipment, etc. enables simulation and testing of coded specimens containing flaws by the students. The results can be evaluated manually or automatically.

NDT Expert answers most of the queries of the user through a Question and Answer Format. It provides data, procedures and specifications etc., The software also provides for integration of the specifications and procedures of the organization. Linkages will be provided in the software for access to specifications of other organizations such as ASTM, ASME, BIS, DIN etc., where the same is allowed. Where regulations prevent such an access, the Specification Number, its scope etc., will be provided. The software will also allow connecting to other NDT sites such as www.asnt.org, www.ndt.net, www.ndtcabin.com, manufacturer's websites etc. In addition, a detailed bibliography, a detailed database of references, published papers etc., will also be available.

In this paper, the detailed specification of such software, right now 'on the drawing board', is presented. Detailed implementation of this is expected to take a few years and will initially be carried out in the author's own organization. The model is however being designed to enable other organizations to customize the same to their needs with minimum effort.