

# Cert News

## NICEIC Certification

### Centre News & Information

#### Issue 13

Welcome to edition thirteen of the news and information from NICEIC Certification.

#### NICEIC Package & Qualifications Up-date:

##### Heat Pump Package

The NICEIC Certification heat pump package has undergone a complete review with improvements added, the newly maintained package is subject to implementation within NICEIC Centre's, no later than the **1<sup>st</sup> of February 2024**.

The changes reflect the introduction of revised standards, changes in technology, requirements of technical competencies, liaison with industry stakeholder and feedback from our customers. This has led to review and update for both the training and assessment suite of materials. It was also an ideal opportunity to review the current NICEIC Certification "On-Site-Guide" publication for heat pumps in support of the training and assessment package.

The objective for reviewing the NICEIC Certification heat pump training and assessment package was primarily to offer coherent knowledge, understanding and application for the design, installation, commissioning, handover and maintenance of both air and ground source heat pumps and their heat emitter systems. Explaining the physics behind the operation of heat pumps, their component parts and how they function is a key requirement for the delivery methodology. The learner will experience a training and assessment environment that will require a comprehensive set of delivery techniques from the provider to assure the required level of understanding.

The target population expectation for the programme is, for example, existing fossil fuel, heating, plumbing, mechanical, ventilation and electrical engineers who are already holding the required utility sector prerequisite qualifications and experience.

The subject matter delivery will require a level of understanding for the ancillary equipment connected to a heat pump for extracting low grade renewable heat from the external environment for use to heat domestic properties, as well as the domestic hot water demand.

### **Unit 1: ASHP & GSHP Core Foundation**

Unit 1 is a mandatory unit that all learner candidates must undertake. Unit 1 is for those individuals who require to be trained, assessed and if successful deemed competent as an installation and maintenance engineer for ASHP or GSHP, or both. Once Unit 1 is attained the learner candidate can progress to the pathways of ASHP, GSHP and/or Design. Learner candidates applying for only the design competence (Unit 4) shall also complete the training and assessment for Unit 1.

The knowledge, understanding and performance criteria for “Unit” 1 training and assessment is based on a foundation level over a broad range. Unit 1 will touch on air source and ground source principles to include a minimal content of design.

Unit 1 consists of training and assessment to include:

- Vapour compression systems and system components.
- Different types of heat pump categories and recognising their individual heat source.
- The requirements of the current fluorinated greenhouse gases regulations.
- The performance factors in relation to selecting, installing and commissioning.
- How to use manufacturer’s product data to select heat pump units.
- The typical mean water temperature when designing hydraulic emitter circuits.
- The typical annual operating hours and limitations for a heat pump.
- The different types of heat pump requirements for domestic hot water provision.
- Hot water cylinders, types, volumes, operating parameters, risks and sizing.
- Types of hydraulic heating system emitters, layouts and sizing for heat pump systems.
- Heat pump standards, sizing, rating, flow rates, flow temperatures and circulators.
- Buffer vessels, purpose, operation, application, configuration and sizing.
- The common components and control systems for heat pump units and emitter systems.
- Pre-installation checks for heat pump installations and hydraulic emitters circuits.
- The requirements to avoid undue noise and/or vibration transmission from heat pumps.
- Requirements where brine circuit pipework passes through the external building fabric.
- Charging and flushing requirements for hydraulic systems.
- The conditions required to implement commissioning activities for heat pump systems.
- Testing and commissioning.
- The pre-handover checks that need to be carried out for a heat pump system installation.
- Generic health, safety and environment.
- The legislation governing the installation of heat pumps.

Training shall be engaging and interactive and include an appropriate level of practical demonstrations and performance.

Training shall be evaluated by the learner attaining the required standard of theory and practical assessments, the required standard is 100%.

N.B. The duration may be reduced when combined with other pathway units as duplication of generic criteria will be removed.

### **Unit 2: ASHP (Installation & Maintenance)**

Unit 2 is for learner candidates who are applying to be trained, assessed and if successful deemed competent as an installation and maintenance engineer for ASHP systems having already attained the requirements for Unit 1.

The knowledge, understanding and performance criteria for “Unit” 2 training and assessment is specifically for the installation, commissioning, handover and maintenance of ASHP and associated heat emitter systems. Unit 2 will deliver the training and assess the learner for the knowledge, understanding and application of a specified type and range of air source units and systems.

Unit 2 consists of expanding the training and assessment criteria to include:

- Vapour compression systems and system components.
- ASHP Monobloc, split, monovalent, bivalent, hybrid, space heating and hot water.
- Heat load, flow rates, flow temperatures, emitters, cylinders, differentials and calculations.
- Performance factors, permissions, planning, site considerations and environment.
- Manufacturer’s instructions, siting, structure, clearances, neighbours and restrictions.
- Components, controls, equipment, application and principles of operation.
- Production of condensation, methods of dispersal, normal operation and defrost mode.
- Installation standards, parameters and engineering techniques.
- Hydraulic heat emitter systems, types, configurations, zones, circulators and applications.
- Standard requirements and restrictions for hot water provision.
- Expanding on the use and sizing of buffer vessels in system design.
- Heat emitter pipe sizing, flow rates, temperatures and pump selection.
- Installation requirements for insulation of external pipework.
- The requirements for testing and commissioning.
- The requirements for handover.
- The requirements for regular servicing and fault diagnostics.
- Generic health, safety and environment.
- The legislation governing the installation of heat pumps.

Training shall be engaging and interactive and include an appropriate level of practical demonstrations and performance.

Training shall be evaluated by the learner attaining the required standard of theory and practical assessments, the required standard is 100%.

N.B. The duration may be reduced when combined with other pathway units as duplication of generic criteria will be removed.

### **Unit 3: GSHP (Installation & Maintenance)**

Unit 3 is for learner candidates who are applying to be trained, assessed and if successful deemed competent as an installation and maintenance engineer for GSHP systems having already attained the requirements for Unit 1.

The knowledge, understanding and performance criteria for “Unit” 3 training and assessment is specifically for the installation, commissioning, handover and maintenance of GSHP and associated heat emitter systems. This unit also covers the different type of ground heat exchangers that can be used depending on the environment for the proposed installation. Unit 3 will deliver the training and assess the learner for the knowledge, understanding and application of a specified type and range of ground source units, collectors and heat emitter systems.

Unit 3 consists of expanding the training and assessment criteria to include:

- The different principles of operation and application of ground source collectors.
- Collector types, closed, open, horizontal, vertical, slinky, compact, ground water, etc.

- Brine pumps for collector circuits, transfer fluids and transfer principles to evaporators.
- GSHP unit vapour compression systems and system components.
- Monovalent, bivalent, hybrid systems and the considerations for external temperatures.
- Collector selection, ground conditions, specific heat capacity and annual operating hours.
- Collector materials, sizes, jointing, trenches, boreholes, dimensions and backfill.
- Protecting collectors from mechanical damage, effects of thermal transfer and balancing.
- Proximity to other services, buildings and clearances.
- Charging, flushing, purging, equipment, flow rates, transfer fluid and pressure testing.
- Antifreeze, concentrations, biocides, sampling, standard methods of work and equipment.
- Hydraulic heat emitter systems, types, configurations, zones, circulators and applications.
- Expanding on the use and sizing of buffer vessels in system design.
- Heat emitter pipe sizing, flow rates, temperatures and pump selection.
- Heat load, flow rates, flow temperatures, emitters, cylinders, differentials and calculations.
- Performance factors, permissions, planning, site considerations and environment.
- Manufacturer's instructions, siting, structure, clearances, neighbours and restrictions.
- GSHP unit components, controls, equipment, application and principles of operation.
- Installation standards, parameters and engineering techniques.
- Standard requirements and restrictions for hot water provision.
- Installation requirements for insulation of external pipework.
- The requirements for testing and commissioning.
- The requirements for handover.
- The requirements for regular servicing and fault diagnostics.
- Generic health, safety and environment.
- The legislation governing the installation of heat pumps.

Training shall be engaging and interactive and include an appropriate level of practical demonstrations and performance.

Training shall be evaluated by the learner attaining the required standard of theory and practical assessments, the required standard is 100%.

N.B. The duration may be reduced when combined with other pathway units as duplication of generic criteria will be removed.

#### **Unit 4: Heat Pump System Design**

Unit 4 is for learner candidates who are applying to be trained, assessed and if successful deemed competent for the design of ASHP systems or GSHP systems, or both having already attained the requirements for Unit 1.

The knowledge and understanding criteria for "Unit" 4 training and assessment is specific to system design and includes the learning and assessment for low temperature heating and hot water systems (LTHWS) as part of the design package.

Unit 4 pathway is more complex in structure as it has 3 sub-elements for design. Each of these sub elements has its own training and evaluation criteria and are listed as follows:

- Unit 4: Heat Pump System Design (LTHWS).  
This is a mandatory sub-element for design. All learner candidates applying for ASHP design and/or GSHP design must complete this training and assessment criteria, if not already holding

the award. The criteria is specific to hydraulic heat emitter system design, low temperature heating and hot water systems and heat loss calculations for dwellings using the methodologies contained within the Domestic Heating Design Guide (CIBSE).

- Unit 4: Heat Pump System Design (ASHP & GSHP).  
All learner candidates applying for ASHP design and/or GSHP design must complete this training and assessment criteria. The training and assessment criteria is mostly generic to both disciplines in relation to the MIS-3005-D standard requirements.
- Unit 4: Heat Pump System Design (GSHP).  
This unit training and assessment criteria is specific to GSHP design and relates mainly to the GSHP unit requirements for selection, the ground collector type, the selection and sizing of the ground collector and the principles of operation of the ground collector. The criteria again is specific to the methodologies contained within MIS-3005-D, MGD-007 and other supporting reference material.

## Gas IGEM/IG/1 Standards of Training

In 2023 the industry completed a review of the new entrant route into the industry for Emergency Service Providers and Approved Meter Installers. This has produced an updated IGEM/IG/1 Supplement 3 which is now introduced from the 1<sup>st</sup> of January 2024. NICEIC Certification from September 2023 have completely reviewed and redeveloped our MLP “ESP & Approved Meter Installer” package to align with the new supplement.

The package has undergone extensive redevelopment as a result of industry consultation and now includes additional pathways for aspiring new entrants to the sector. The review and redevelopment has resulted in the following key areas of change:

- The core units of accreditation now align with the VOT Reports.
- The core units of accreditation now align with the VOT Theory Papers.
- Validation of Evidence Matrixes (VOEM) have been introduced.
- The following additional pathways are now part of the package:
  - MET3LS Pathway (Included in Unit 17).
  - REGT1 Pathway (Unit 18).
  - MET4 Pathway (Unit 19).
  - ESP Operative Pathway (Unit 20).
  - TPCP1 Pathway (Unit 21).
  - TPCP1A Pathway (Unit 22).
- The Training Specification & Guidance has been edited to explain the changes.
- All documents within the package have been subject to change.

Please ensure that your centre is using the most recent issue of any industry normative documents and/or guidance. You will find a list of these documents in the reference folder.

The ESP and/or Meter Installer MLP 01/24 Contents Menu shows items listed in red print, as the items that have changed or added since the last issue of the package.

Please destroy any previous versions of the package. If you have any cohorts of learners who have commenced the MLP prior to the 1st of January 2024 then it is permissible to deliver that version until completion. Should you require any assistance during the implementation of this new criteria please contact your primary contact.

## Gas ACS Criteria Updates - 1st Jan 2024

All approved ACS assessment centres have now been issued the new 1st January 2024 amended assessment documentation (01/24) for implementation.

The Domestic, ESP & Meter Installer natural gas suite of changes for 2024 are mainly additional criteria related to the following:

- The introduction of IGEM/G/13.
  - Checking OP at Meter Outlet.
  - Dealing with incorrect OP when identified.
  - Installation load when checking OP.
  - Liaising with ESP.
- UK Building Regulations/Standard changes affecting internal kitchen ventilation & CO detectors.
  - England.
  - Wales.
  - Scotland.
  - Northern Ireland.
- We have produced a “Building Regulations Supplement” to aid navigation of answers.
- Numerous supporting documents have been reviewed and edited to accommodate changes.
  - Assessor Checklists.
  - Assessor Checklist Summaries.
  - Theory Rationales.
  - Theory Papers.
  - Overlays.
- MET4 reviewed and edited for IGEM/GM/6 Edition 3.
- CMET1 reviewed and edited for IGEM/GM/6 Edition 3.
- CMET1 criteria reviewed and edited for IGEM/GM/8 Parts 1 – 5.
- MI folders updated for correct versions and include new supplements.
- TB118a introduced for 2024.
- The changes have also generated edits to the changeover documentation.

The LPG suite of changes for 2024 are very minimal with the key areas being:

- Theory Rationale updates for OB7 (A).
- OB7 (A) reviewed and updated for Question 41 (CO Alarms UK Regions).
- Building Regulations Supplement (Section 5) inserted into MI Folder for Q41.
- OB6 & OB3 have reference change for TB118 to TB118a.

The Non-Domestic suite of assessments have undergone similar criteria changes related to the Domestic, ESP and Meter Installer equivalents. There are also changes in relation to IGEM/UP/19. The key documents affected are:

- Theory Rationale.
- Theory Papers OB2, OB3, OB5, OB6, OB7, OB8, OB9 and OB10.
- Overlays OB3, OB5, OB6 and OB7.
- ACL edits.
- ACLS edits.

As always centres should use the “Read-Me-First” and contents menus to navigate the changes and ensure all practitioners of the scheme are updating their CPD’s.

## Validation of Training (VOT) Criteria and Reports.

A revised “Validation of Training” (VOT) package (01/24) has been issued to all centres operating the ACS scheme. The use of this package is essential in supporting the requirements of Guidance Note 8 where applicant candidates are changing sector, extending scope and/or range of their activities.

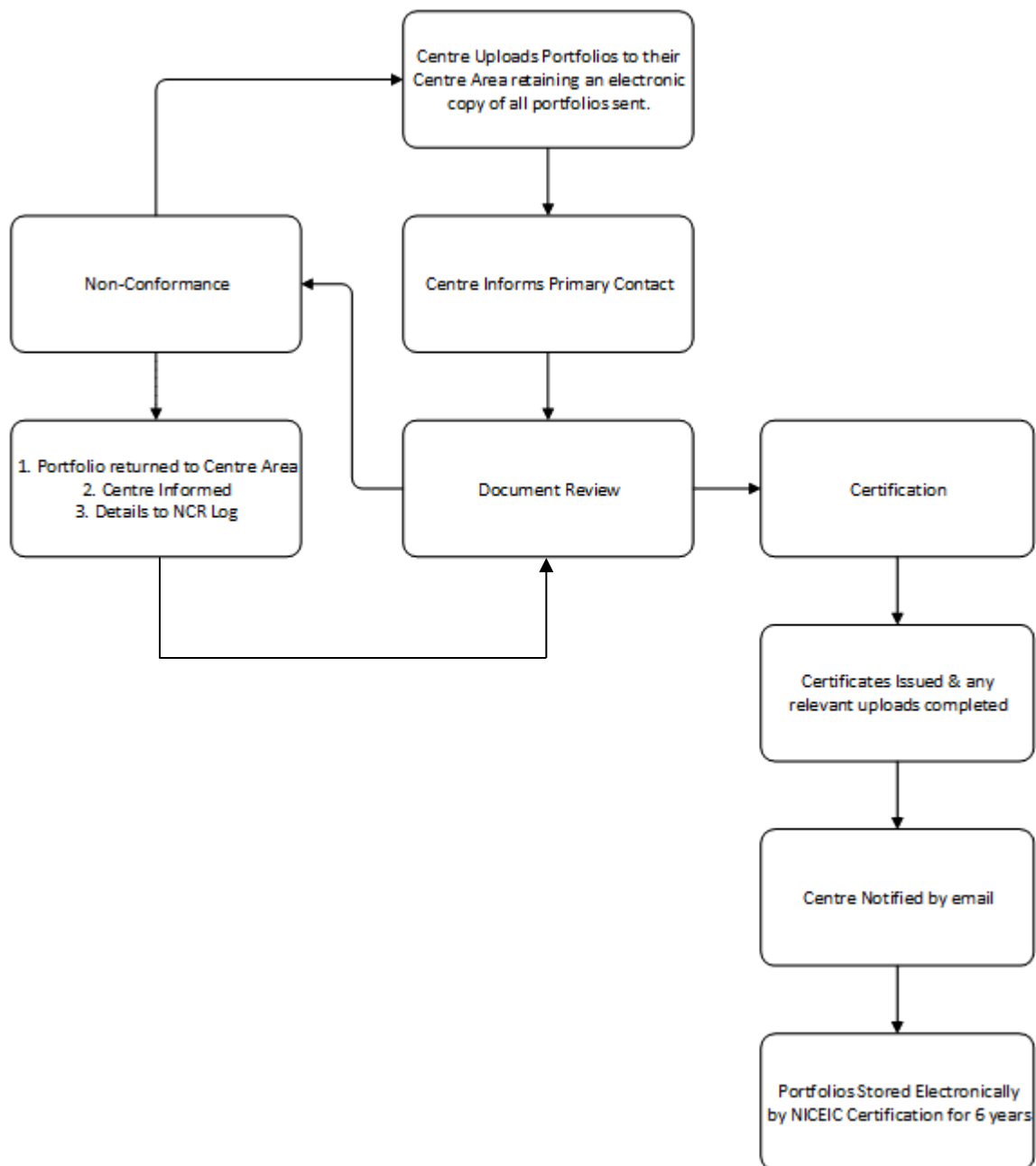
Please ensure you are using the 01/24 version of the package.

## Electronic Transfer and Storage of Candidate Paperwork for Approved Assessment Centres, using OneDrive

NICEIC Certification continue to roll out our system for the Electronic Transfer and Storage of Candidate Paperwork which offers a fast and secure method for our approved centres to submit their portfolios for Document Review prior to Certification.

Any Approved Centre who wants to use this facility in the future should contact their Primary Contact to discuss the details.

To remind you of the Electronic facility, a flowchart of the key steps of the process is shown below:



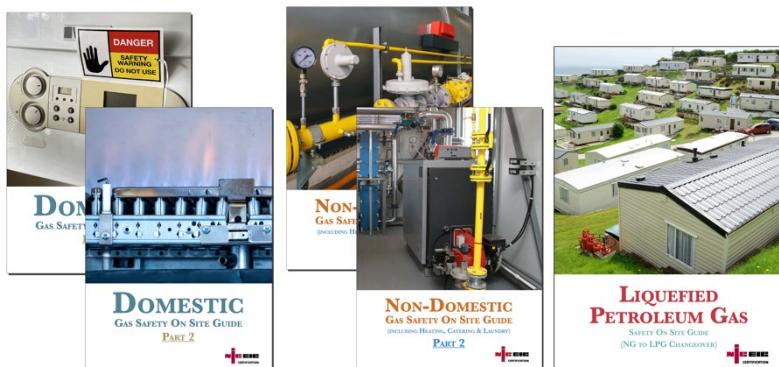


## NICEIC Publications update.

### Gas On-site Guide Update

As many may recall, during 2023 NICEIC Certification introduced revised range of Gas Safety Guides in a NEW A4 format:

- Domestic (Version 10; PART 1 ISBN: 978-1-83863-042-3 & PART 2 ISBN: 978-1-83863-043-0),
- Non-Domestic (Version 11; PART 1 ISBN: 978-1-83863-044-7 & PART 2, ISBN: 978-1-83863-045-4) and
- Liquefied Petroleum Gas Safety Guide (Version 8; ISBN: 978-1-83863--050-8).



Feedback from many centres on the new format of the guides, including the technical updates has been very positive but a question on one specific aspect of the design - the single colour of the section tabs for both Domestic & Non-Domestic Guides – has been raised as an impediment for candidates in cross-referencing material.

To address this concern, NICEIC will reintroduce a colour tab system on the Guides next reprints during 2024.

The last issue of Cert News also referred to these publications being available digitally using the VitalSource platform. All 3 x guides are available now digitally – the Domestic and Non-Domestic Guides have been consolidated to form a single publication for each sector as physical size is irrelevant in the digital format. The digital version of Domestic OSG (ISBN: 978-1-83863-047-8) contains both PARTs 1 & 2 as does the Non-Domestic OSG (ISBN: 978-1-83863-048-5).

## Heat Pump On-site Guide Update

As highlighted at the start of this edition of Cert News, NICEIC Certification's Heat Pump package has undergone a major revision with all supporting documentation being updated. The reference publication also required a major revision in support of the heat pump package, culminating in two NEW publications to support this important market in line with MCS MIS 3005-I & D.



The main publication 'Air Source Heat Pump On Site Guide (Monobloc Units)' was released in Q4 of 2023 and a Companion Guide covering specific information related to Ground Source Heat Pumps is scheduled for release Q1 2024.

The main ASHP guide goes into detail on the physics behind heat pumps and how they work, the requirements of building/planning regulations, including MIS 3005 and the installation, commissioning and fault finding ASHPs.

The 2nd Companion Guide which requires the reader to have the main ASHP publication deals specifically with ground arrays (various configurations including manifolds/chambers and headers), installation requirements, commissioning of ground collectors (filling/flushing & testing) and Fault finding GSHPs.

The high-level content of each Guide is as follows:

### ASHP On Site Guide (ISBN: 978-1-83863-049-2) –

- Introduction & Scope
- Chap 1. Reducing the UK emissions
- Chap 2. Regulations and Guidance
- Chap 3. Energy Efficiency – General
- Chap 4. General Health & Safety
- Chap 5. Fundamental principles of Heat Pumps
- Chap 6. The Generalities of Heat Pump Design
- Chap 7. Heat Pump Sizing and Heat Sinks
- Chap 8. Installation of Air Source Heat Pumps
- Chap 9. Servicing & Fault Finding of Air Source Heat Pumps

### GSHP Companion Guide (working chapter headings) –

- Introduction & Scope
- Chap 1. Regulations and Guidance
- Chap 2. Energy Efficiency
- Chap 3. General Health & Safety
- Chap 4. Ground & Water Source Energy Collectors
- Chap 5. Fundamental Principles of Sizing Ground Collectors

- Chap 6. Commissioning Ground Collectors
- Chap 7. Servicing & Fault Finding of Ground Source Heat Pumps

N.B. The GSHP companion Guide is undergoing final editorial review with further detail to follow during Q1. 2024.

## Group Competence Scheme (GCS) Update.

NICEIC Certification is still the only Certification Body Accredited to Certify the Group Competence Scheme (GCS).

If you would like more information on the GCS, please contact [ian.crockett@niceic.com](mailto:ian.crockett@niceic.com).

## The Certification of Persons Management System Council (CPMSC).

The last CPMSC meeting was held via Teams on the 7th December 2023. The CPMSC are independent of NICEIC Certification and its role is to oversee the activities of NICEIC Certification to ensure the proper functioning and impartiality of the Certification of Persons and Management System activities.

If you or your customers have any issues or queries that you would like to bring to the attention of the CPMSC then these can be sent directly to the Chairperson of the CPMSC (currently Mr Richard Searle). The direct e-mail address is [CPMSC@Certsure.com](mailto:CPMSC@Certsure.com)

The next meeting of the CPMSC will be held in June 2024.

An Introduction to NICEIC Team members;

Lisa Davies

NICEIC Certification, Certification Administrator



**When did you join NICEIC?**

I joined the NICEIC in February 2022.

**Who were your previous employers?**

I have previously worked in sales, customer care and administration all of my working life (40 plus years) this has included admin & audit in Car Companies; admin in Schools; sales of contracts and hardware in telecommunications; admin and finance in the Plumbing industry; customer care in plumping hardware supplier and also in a Care home as a Rota Coordinator.

### **What qualities do you bring to the roll?**

I like to think I bring to the role a few years of experience on organisation; time management and understanding the importance behind customer care. I like to think I am reliable and do not rest until all work is completed.

### **What skills have you developed during your career?**

Skills I have developed during my career are so many to mention but the best three skills I feel are important to all are to be organised and plan your day / week, wisely keep on top of your time management; always try to remain professional and understanding of others and their workload; control your anxiety to new things - times change and new computer systems can be scary at first glance – remember that in a few days it will all fall into place. Practice in your own time if needed and get up to speed with ease and at your own pace.

### **Tell us about your home life and any interests.**

When I do have spare time after my family, I love crafts, making cards for loved ones and have a craft room that I visit frequently, I am a Beekeeper which in summer months takes up most of my free time at weekends especially when harvesting the honey. I Love music, thrillers and films.